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JULY TO DECEMBER, 1933

This is an alphabetical index of articles and discussions arranged by leading words. It contains occasional cross references. Names of authors and men who discussed the papers are also included. Details of society proceedings, including the titles

of papers read, officers elected, etc., can be located in proceedings under Societies, Editorials, News of the State, Marriages, Deaths. The subjects of editorials also appear alphabetically and are marked (E).

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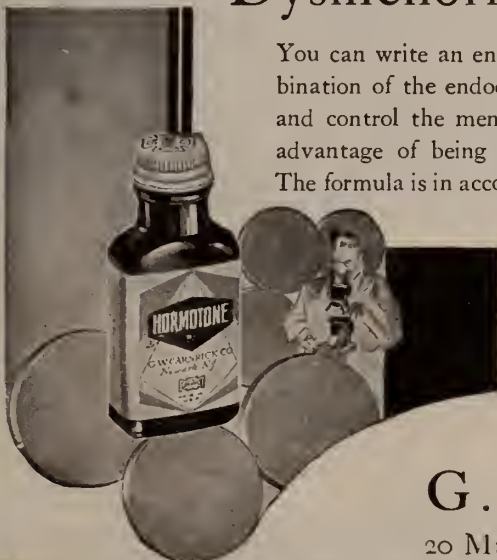
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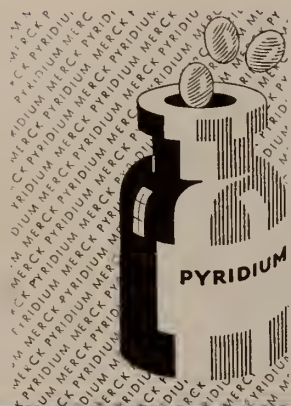
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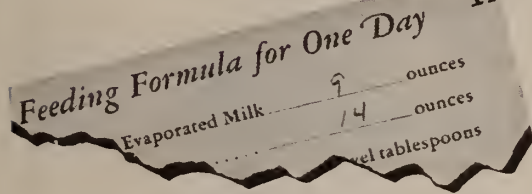
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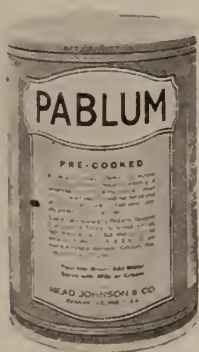
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Editorials

MANY COMPLAINTS ARE HEARD REGARDING UNFAIR MEDICAL COMPETITIONS

Many complaints are heard as comment upon the economic situation of the doctor especially as regards unfair competition. For example, many of our doctors are bitter in their denunciation of the unfair competition offered by the Billings Hospital and the University of Chicago clinics, among others. Not because superior medical service is rendered there but because the prestige of the university attracts patients who would not otherwise employ members of those staffs. By engaging in the practice of medicine in competition with private practitioners it seems likely that any university is missing an opportunity to become a consultation center of great service alike to the public and the profession.

In Chicago The Public Health Institute is always a thorn in the doctor's flesh. It seems likely that its greatest service has been rendered to its founders and the director of its activities. Its excuse for existence is the claim that treatment has been made accessible to some persons who could not have paid for it elsewhere and that other persons have been persuaded to accept treatment there who would not otherwise have received any. It is doubtful if either of these claims could be substantiated.

Some practices of the Infant Welfare Societies are irritating to physicians. Ed. N. Hurley's idea not long since is another very acute irritant. The Rosenwald Foundation proposes to rescue the "man of moderate means" from the grasp of the ignorant and inefficient private practitioner. Yesterday it was the poor man who needed the assistance of the philanthropist, to-day it is the man of moderate means, tomorrow even the rich man may need this assistance. The private practitioner will have become entirely incompetent except when he shines in the reflected light of some Foundation.

These several phases are all incidental manifestations of that comment made a few years ago, by the New York State Judiciary Convention that "In the United States there are everywhere being developed at enormous cost in the most extensive fashion a multitudinous bureaucracy with autocratic powers and arbitrary discretion and a vast system of complicated and often conflicting administrative jurisdictions in relation to property and business and personal conduct, which reach and effect almost every individual, and most of which only a few years ago would have been regarded as of strictly personal concern and not to be tolerated by a free people.

"Extensive legislative, executive and judicial powers are being vested and combined in administrative bodies in distinct and reckless disregard of the sound principles of the separation of governmental powers which was deemed so essential to the due protection of individual rights by the wise founders of our republican form of government.

"Even controverted questions of law and fact, heretofore regarded as fundamentally and exclusively for judicial determination, are being intrusted to bureaucratic discretion, and for orderly judicial procedure as known to our fathers and the competent and impartial interpretation of the laws by learned judges and juries, arbitrary methods and untrained judgment are being constantly substituted."

Now elements of state medicine, the direct outgrowth of such bureaucracy carry as a direct menace:

1. Complete control of the medical organization by the Federal Government, with every physician on the same basis as a building janitor.

2. Control of all medical schools by a Federal Medical Education Bureau. Medical students may receive tuition and maintenance fee, and medical research will be controlled by the Medical Research bureau.

3. Government control of hospitals and greater emphasis on the hospital training of students.

4. Abolishment of private office, establishment of clinical groups with complete laboratory equipment.

5. State medicine can best be defined as the assumption by the commonwealth of those duties in connection with the prevention, cure or alle-

viation of disease such as are commonly performed by private individuals who have been duly qualified and registered as physicians.

Now one of the outposts established by state medicine through that section of bureaucracy and lay dictation of scientific performance working to effect state medicine was the notorious Sheppard-Towner Bill, reappearing at a later session of the national Congress as the Sheppard-Towner-Newton bill and even more to be dreaded than in its original form, and like the pay clinic both inexcusable and unnecessary. Reports of the Cornell Pay Clinic in New York City, made under date of even so far back as 1925, if read by any thinking physician, afford enough documentary evidence in any one of ten paragraphs to make any physician who respects his professional duty to mankind and to the mother science sound the tocsin for the council of war and preparation to fight the battle not only of humanity but of civilization.

Frankly, unless the tide of bureaucratic control and lay dictation of the practice of medicine is checked the whole trend of progress will be on the reefs. There is as much legitimate cause for free distribution of food, clothing, and pianos as there is for free medical service for citizens who can pay for this, as well as for other necessities of life. That medicine is the great humanitarian science, does not eliminate the economic necessities of the men who minister its laws. If the trend of the times were to endow the doctors rather than the lay institutions and auxiliaries that fatten upon the skill of physicians then there would seem to be something of right and reason in a tendency, that under present conditions is certain to plunge what has been the world's oldest, safest and most successful democracy into the blackness of communistic sovietism. The hand writing on the wall is too legible to misread.

From the Harrison narcotic act and the dying Volstead act already has come the deprivation of many citizens of what is a constitutional right second only to and scarcely less sacred than the right of the ballot and that is the right of trial by jury. Under these two travesties of justice in legislation there are appointed boards and commissions with what is an absolutely czaristic right and power over members of what is supposed to be the land of the free and the home of the brave.

Few physicians have not known the hampering curse of these two acts. Unless the profession is willing to submit to even further ignorant over-ruling on the part of the laity, the job-making politician and the theorist among so-called reformers, whose good intentions make twice as much trouble as their supposed benefactions ever might, then the profession must make ready to get up and fight to the last ditch, the last dollar and the last vote against bureaucracy and lay dictation in every form.

Achievement in any task means to begin at the beginning. It must be remembered that the laity is suffering from delusions of grandeur as to its ability to "doctor up" the country. Like an adolescent youth, who has just solved what he thinks is the secret of life and is keen to tell the whole world something that he thinks it never heard of before, so does the laity dressed up in its proud bureaucracy go about telling the skilled and trained physician how to care for the sick and the ailing. Worst of all is the detail that this same laity, be it moneyed, has the sad affliction of a dementia that feels the way to make a stir in the world is to so disburse its wealth that the physician will find himself competing not with science and skill but with chain store department house methods of handling disease, sanitation and research. Not even the law nor the church would tolerate for an instant such impudence on the part of its clientele.

National prophylaxis must be in the hands of physicians who are physicians, not the laity. Even such near details as community education in sanitation, periodic health examination, the progress of scientific medicine, dangers of cults, charlatanism and false reforms should be vested in physicians and in physicians only. And every physician in this United States should constitute himself a perpetual committee of one to combat at every angle, and especially by community education the dangers of socialized medicine, of lay community control of the practice of medicine, of political control of the practice of medicine, of the enactment of falsely premised legislation of which much is proposed every time a community or a lawmaking body assembles, of the growth of all such anti-scientific tendencies as will eventually remove the practice of medicine from the hands of the profession and place it under the political control of the laymen.

There is no time for delay. If twenty years

ago any of our contemporaries or predecessors had been confronted with the situation dominating the practice of medicine today the cry would have arisen "That can never come to pass." Look squarely in the face the trend of the changing times. Do you realize, doctor, what confronts you in the way of legal penalty if you dare to exercise your right of knowledge to prescribe certain remedies that a group of the laity thinks you should not? It is a living crime against the profession that politicians and lawyers have the right, rather have assumed the right, to tell the scientific men of medicine how and when and where to ply their trade.

The taxpayers have for several years been complaining at the cost of enforcing a prohibition law that does not prohibit. Heaven help them when they find that this so-called "free Medicine" that is being put up to them by the promoters of clinics, corporations practicing medicine for profit and the like comes out of their hide. For come it will, just as the doctor who sits idly by and lets the invader stalk through his fields will sit amidst the desolation of what has been man's greatest gift to man and cry in vain against his indolence of spirit, his diffidence to conditions that let him sit inert and acquiescent in this hour when scientific medicine, and with it the welfare of humanity, is fighting for the right to live and do and dare as men of medicine through the thousands of years have done, ably, earnestly, sacrificingly, rejoicing, triumphant!

NEW ILLINOIS LAW MAKES EYE PROPHYLAXIS OBLIGATORY

On July 1, 1933, a new law signed by Governor Horner on April 20, 1933, which makes obligatory the use of a one per cent solution of silver nitrate, or some equally effective prophylactic, went into effect. The State Department of Public Health, which is responsible for the administration of the law, is prepared to distribute the silver nitrate solution free of charge to physicians, hospitals and others qualified to participate in obstetrics.

The purpose of the law is manifestly the prevention of ophthalmia neonatorum. Its aim is to extend the practice of prophylaxis to a relatively small number of babies who have not enjoyed the benefit of this protective procedure in the past.

The law in its present form, which is a revision of a law first enacted in 1915, reads as follows:

"Section 1. Sections 3 and 8 of 'An Act for the prevention of blindness from ophthalmia neonatorum; defining ophthalmia neonatorum; designating certain powers and duties and otherwise providing for the enforcement of this act,' approved June 24, 1915, are amended to read as follows:

"Sec. 3. It is the duty of all maternity homes and any and all hospitals or places where women resort for purposes of childbirth, to post and keep posted in conspicuous places in their institution, copies of this act, and to instruct persons professionally employed in such homes, hospitals and places regarding their duties under this Act, and to maintain such records of cases of ophthalmia neonatorum in the manner and form prescribed by the *Department of Public Health*.

"It shall be the duty of any physician, midwife or nurse who attends or assists at the birth of a child, to instill or have instilled in each eye of the new born baby, as soon as possible and not later than one hour after birth, a one per cent (1%) solution of silver nitrate or some other equally effective prophylactic for the prevention of ophthalmia neonatorum approved by the State Department of Public Health.

"Sec. 8. Any person violating any of the provisions of this act shall be guilty of a misdemeanor and shall, upon conviction thereof, be fined not less than fifty (\$50) dollars nor more than one hundred (\$100) dollars, or be imprisoned in the county jail not to exceed six months, or both, in the discretion of the court."

MICHIGAN STATE MEDICAL SOCIETY MAKES SURVEY OF MEDICAL SERVICE AND HEALTH AGENCIES.

The alert and progressive Michigan State Medical Society is a pioneer in valuating the needs of medical charity and medical practice.

Through its committee on survey the Michigan society has conducted intensive and extensive studies on the conditions of medical practice in its own state.

After an expenditure of upwards of \$12,000 a report of the committee on survey of medical

services and health agencies of the Michigan State Medical Society is ready for distribution. The report in final form will be presented to the House of Delegates of that organization. Dr. F. C. Warnshuis, secretary, Michigan State Medical Society, 148 Monroe Avenue, Grand Rapids, Mich., announces that a limited number of copies is available for distribution in other states. These may be had through Dr. Warnshuis' office at \$2.50 a copy.

No doubt other state societies will see fit to make welfare and medical service surveys. The Michigan Society report should prove useful if not invaluable aid to members of official bodies of other state associations that may be contemplating similar investigations. We understand that from a practical standpoint the Michigan State Society report far outweighs or overshadows the report of the committee on the Costs of Medical Care.

NOTE THE SERIOUSNESS OF THE SITUATION TO WHICH HOSPITALS HAVE COME. HOSPITALS IN THEIR ATTEMPT TO GAIN ECONOMIC STABILIZATION HAVE THE SYM- PATHY AND THE HANDCLASP OF THE MEDICAL PROFESSION.

Another inherently unsocial yet seemingly altruistic factor is injecting itself into affairs medical.

This time the strings are pulled through even further lay pressure upon medicine's great auxiliary, the hospital system of the country. This new lay promise to the distraught economic heads of the hospital is trumpeted forth as a probable panacea for the present epidemic of emaciation of hospital treasuries.

This purported light on the horizon is rooted in the thoroughly commercial yet often expedient idea of "If you can't get what's due in one fell swoop, catch it as catch you can." The idea is not devoid of merit. This, of course, makes it an even more difficult proposition upon which to secure the proper perspective.

To a large extent hospital problems are medical problems.

Installment plan of payment for hospital care has received endorsement in principle, if not in practice, by the American Hospital Association.

If such periodic payments prove another

Alexander Hamilton "smiting the rock of national credit to make financial prosperity gush forth," then great shall be the day thereof!

Unfortunately "big business," progenitor of the installment plan, has not found this scheme to be 100 per cent. successful. In fact, it is doubtful, to say the least, if the very string by which business men enforce assurance of good faith in installment buying which is that if a customer fails to pay for what he has bought on the installment plan then upon demand it is legal to effect a *return of the goods*.

Perhaps in some maternity cases, especially in poverty-stricken families, the patient would be willing to agree to such refunds. News sheets recently recorded the return to an "on time" dentist of a set of false teeth for which the possessor had failed to pay altogether. Outside of a difference in the kind of goods there is also a difference in the ethics and relationship between hospital and patient and between customer and shopkeeper. This almost intangible difference has made scientific medicine the cat-paw for all sorts of socialistic schemes, teeming with destruction, at which business would balk at the very first toss of the dice of circumstance and communism. Since this difference exists it must be recognized. Man is a biped and rules for quadrupeds must be modified to meet the physical needs of man.

Here is the situation in a nutshell.

Happily enough the brochure sent out by the American Hospital Association will put a bee in the bonnet of many a lackadaisical brain that has persistently refused to take note of the seriousness of the situation to which hospitals have come, what with the depression, and with endowed foundations and universities encroaching upon hospitalization just as these misguided institutions have been busy for years usurping the rights of the medical profession.

This brochure outlines a model program for group hospitalization that merits study, discussion and consideration. For want of a better term these plans may be called "hospital insurance." Some Ohio cities are advancing now along this line. With the hospitals of the country colloquially whispering that they are "broke" it is indeed high time that something be done to stabilize hospital incomes, a necessity that the medical profession has realized

about itself as well as about the hospitals for this long time and which the ILLINOIS MEDICAL JOURNAL has persistently preached. Economic problems of the hospitals are no keener than those of the medical profession which long ago had to put to the famous and archaic axiom of "Physician, know thyself" the addendum, "Physician, save thyself."

The hospitals in their attempt to gain economic stabilization have the sympathy and the handclasp of the medical profession. But before any medical endorsement of radical schemes is given, the medical profession to a man wants to sit down and figure out

"Will it work? And how?"

Medicine has serious economic disturbance of equilibrium right now, that is going to affect the question of hospitalization. After all, the hospital is more dependent upon the doctor than the doctor upon the hospital, marvelous as is the aid the hospital gives the doctor.

In general, anything that savors of the idea of "insurance schemes" sniffing at the doors of medicine or of medicine's auxiliaries, such as the drug business, hospitals and the nursing profession, the doctor has learned by sad experience, proven to be more of a scheme as a rule than they are of an insurance—that is of anything but insurance for the scheme itself.

Without exception such grand answers to problems usually should be examined under the Aegis of "Caveat emptor."

"Let the buyer beware" ought to be written in the hat of every doctor and put at the head of every hospital ledger. (Being balked by medical realization of communism's monkey-schemes, the next step of communism is to get at the doctors through the hospitals.

The hospital is another medical problem. Right now before the false dawn of an erratic socialistic "stabilization" has worked its way upward and flooded with error the entire hospital system of the United States, the doctors must get to work and lend a hand in straightening out affairs. Something must be done to take patients out of hospitals or to aid the hospitals both in cutting down the costs of overhead so that hospitalization will not be as it is today—more of a luxury than is the doctor, and boasting a bill paid long before the doctors. Over-hospitalization has run riot.

What medicine and hospitalization are both up against is a set of luxurious hotels with medical service on the side. Many of the hospitals need to be brought down to earth. To a great extent here is a certain proportion of the milk in the cocoanut.

Never mind what some of us think is "ethics." Let us get down and dig out the shortcomings of the matter and then set about a cure.

Dr. James C. Sargent, president of the Milwaukee Medical Society, writing in the *Milwaukee Medical Times*, urges the membership of that society to study developments in hospital financing movements.

"For the directors of a hospital to embark on any revolutionary economic experiment without the full understanding and hearty approval of those doctors who have been most loyal supporters seems unthinkable," he declared.

"When approached with the rather tempting suggestion that the services of the hospital be sold on an insurance basis, staff physicians might well consider what have been the effects of similar developments elsewhere. Under such a scheme the patient deals primarily with the hospital, and too often the choice of physician comes to be a matter of choice by the hospital rather than by the patient.

"Both the medical profession and the public have as much to fear from medical practice under hospital control as under control of the insurance corporations or the state itself."

As the *Ohio State Medical Journal* has well said: "Above all things, the medical profession should not be deluded into believing that the question of hospital insurance is not a medical problem, all arguments to the contrary notwithstanding. It is. The appropriate time to give it the consideration it deserves is now."

As one writer has pointed out with regard to hospital insurance:

"Once it is started, controlled by lay middlemen, it is not improbable that its benefits can be extended to a point where they will invade the field of the private practitioner."

AFTERMATH

Magistrate: "Do you mean to say that such a physical wreck as your husband gave you that black eye?"

Plaintiff: "Your honor, he wasn't a physical wreck until he gave me the black eye."

MASS ACTION IS IMPERATIVE AND MASS ASSAULTS CAN MOVE MOUNTAINS.

We hear with considerable regularity these days members talking about resigning from their medical organizations with the object supposedly of saving money. We can think of nothing more dangerously extravagant than such a procedure. To resign medical activities under present menacing conditions is a wasteful squandering of that invaluable asset of good team work at the very time when collaboration is absolutely vital. One does not change horses in the middle of the stream. When you are out in mid-ocean in a storm you do not see anybody shoving off from the big liner in a rowboat by himself to save passage money. Present conditions make mass action imperative and mass assaults can move mountains.

The rank and file of the profession who have at least a moderate knowledge of the many critical problems confronting medical economic stability will weigh carefully this sound advice volunteered us by wise men in other fields of endeavor and from men in our own profession who have had much experience in and learned many lessons from organized effort and activity. Few, if any, can deny the present need for maintenance by the medical profession of the strongest possible organization — strong in numbers, militant in spirit and untiring in its concerted efforts to protect the interests of the medical profession, and in so doing, the interests of the public at large.

THE COLLAPSE OF MEDICAL PRACTICE.

The collapse of the general practitioner's work is widespread and amazing. Curbstone deliberations hold that our ancient ideals are not in harmony with modern progress, also that the over-production of young graduates has caused a lessened demand for our services by the laity, and that we cannot recover until the practice of medicine by and large is remodeled by removing these restrictions.

Let us remember that, within our time, the living conditions of our people has vastly improved and their interest in their physical welfare has been awakened by lectures, radio talks, health articles in newspapers and maga-

zines, and by sundry other avenues, until the average housewife today is as well informed on many quasi-medical matters as was the physician of a generation ago, and because she has learned the significance of certain disease signs, she therefore calls the doctor more promptly than formerly, but she also considers herself competent to manage the not very acutely ill patient without frequent consultation with her medical advisor.

The nurse, the masseur, the physiotherapist, and our public and endowed institutions vie with the irregular practitioner for the management of the chronic invalid, but this type of competition has always existed.

However, as if to balance these depredations by technicians upon our older types of diagnosis and treatment, the chemist, physiologist and biologist is daily increasing our early recognition of disease. For example, in the digestive, circulatory, respiratory and urinary tracts note the recent advances. It doesn't require an elaborate laboratory or a technical expert to make an Ewald stomach test, a blood count, a blood pressure reading, a sputum examination or a urinalysis, and yet we fear some of our readers are too busy at the moment to make these studies. It is interesting as well as pleasing to note how willingly patients agree to return at an appointed time for a special study. One of the fetiches of institutional treatment is to have an appointed time for every one and every thing.

Well—if you are busy these lines will not interest you, but if business is slow get yourself a text-book on laboratory medicine, brush up on some of the simple diagnostic aids and you will find plenty of pathology that you have overlooked among your patients.

Public Policy Committee.

SCHOOLS THAT ARE RECOGNIZED AS ARE GIVING GOOD COURSES SHOULD ARRANGE THEIR OWN SCHEDULES, DETERMINE THE TYPE OF INTERNESHIP WHICH THEY THINK BEST AND THE NUMBER OF HOURS THAT SHOULD BE DEVOTED TO A SUBJECT.

Doctor Dean Lewis, President of the American Medical Association, in his annual address last month at Milwaukee made many practical suggestions. We quote the following:

The medical profession should take an active interest in hospitalization. Hospital planning should be undertaken. A city or town of 15,000 people should not have three hospitals. One good hospital could take care of the needs of such a community. Better have one hospital that is full and active than three partially filled. The partially filled hospital has an enormous overhead. Always expecting to be filled, it keeps a large civilian staff always expecting that it will suddenly be called on to work overtime.

Hospital construction has run riot. Many hospitals are built as memorials, and some are built to tickle the vanity of hospital architects. This point has been emphasized so much that I need say nothing. One of the many increases in the cost of medical care has been hospitalization.

In some ways the depression has rendered a great service, as it has been demonstrated that many of the mechanical aids to practice are not necessary and that the cost of medical service may be greatly reduced and the quality maintained. Sir James Mackenzie stated the case well when he said "It would be ridiculous to put a man with a cut finger through such a process [a thorough examination] and expect him to pay for it, as it would be to expect an automobile owner to have the entire machine overhauled each time he has a puncture." Simplification of medical practice should be the aim of this organization. Such a simplification will mean a limitation of specialism and the reduction of specialists. A motion providing for the recognition and listing of specialists was passed last February before the Council on Medical Education and Hospitals.

When medical education was passing through such revolutionary changes a few years ago, state licensing boards formulated some stringent and restrictive rules which many of the poor schools could not meet and they were forced to close. With the improvements that have occurred in medical education, many of the requirements might be rescinded. Schools that are recognized as giving good courses should arrange their own schedules, determine the type of internship which they think best and the number of hours which should be devoted to a subject. Their aim and desire is to graduate the highest type of student, who should be admitted to practice when graduat-

ing from such a school without examinations before state boards.

There are certain imponderables which determine one's ability to practice and these are not based on studies, schemes, curriculums or time schedules.

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ILLINOIS MEDICAL JOURNAL

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UNDIMINISHING MORTALITY RATE IN ENGLAND

The A.M.A. London letter, August 29, 1932, has the following data regarding English Maternal Mortality:

In previous letters the concern caused by the undiminished maternal mortality, while all other mortalities have declined, has been mentioned. A committee of eminent obstetricians appointed by the government to advise on the application to maternal mortality and morbidity of the medical and surgical knowledge at present available has presented its final report. In 48 per cent of the cases a "primary avoidable factor" in the form of omission or inadequacy of antenatal examination, error of judgment in management, lack of facilities, or negligence in following advice, was found. In 1930 there were 4.4 deaths per thousand live births and the figure for puerperal sepsis was 1.92.

PUERPERAL SEPSIS

Sepsis was responsible for 18 per cent of the deaths. The majority were due to sporadic infection and could have been prevented by a conscientious technic. In a fifth of the cases the labor was difficult, and serious injury to the maternal tissue was the most important factor in determining fatal infection. In not less than 85 per cent of the normal cases in which sepsis occurred the agent was *Streptococcus pyogenes*. In a large proportion, infection was due to transfer of the microbe from the throat or nose of some one in attendance during the first few days of the puerperium. This may occur by droplet spray directly on the vulva or indirectly from hands, instruments or dressings. In some cases the streptococci are conveyed by the mother's fingers from her own throat or nose; also they may have been originally present in her genital tract. In sepsis following difficult labor there is in addition to these modes of infection an increased chance of endogenous infection by anaerobic streptococci or by *B. coli*, either present in situ or reaching the genital tract from the blood stream.

HATS OFF TO OUR DOCTORS

"Does anyone know if there exists any more a good old-fashioned doctor?" asks "A Patient." Most certainly I do! We have had more sickness during the last 15 months than during the previous 15 years. In each case our doctor knew what to do without "consulting books." "Friend and adviser?" Most assuredly! As much as the oldest friend of the family. "Confidence?" Well, we have told him things that we never would think of telling our dearest friends. As far as the preaching of money is concerned, we have never heard him say a word about it. In fact, he has always said. "Don't rush yourself." I know of cases where he has given his services free of charge, and he is no millionaire either.

But, if the doctor does mention money, is it not coming to him. Doctors' and dentists' bills usually are put off to the very last. "He can wait." How long would "Patient" be "patient" and work without getting paid for his work?

I say, "Hats off to our doctors." Are they not always willing to answer our distress signals, rain or shine? By coming in contact with all kinds of contagious diseases, do they not gladly risk their own lives just to help us? And then we criticize them!

MRS. JOHN WOLFF.

TREATMENT OF PERNICIOUS ANEMIA: EFFECT OF SINGLE INJECTION OF CON- CENTRATED GASTRIC JUICE (ADDISIN)

Roger S. Morris, Leon Schiff, John H. Foulger, Murray L. Rich and James E. Sherman, Cincinnati (*Journal A. M. A.*, Jan. 21, 1933), report that a single intramuscular injection of concentrated gastric juice (addisin) from swine has produced manifestations of intense stimulation of the bone marrow. "Blood crises" lasting twelve and twenty-four days, accompanied by marked reticulocytosis of thirty-four and forty-four days' duration, respectively, were observed. This phase was followed by more rapid increase in hemoglobin and maturation of the red cells. Coincident with the evidence of stimulation of the bone marrow, marked subjective improvement was noted. In the light of one's limited experience, it seems probable that a product can be obtained from the gastric contents of swine of such potency that a single intramuscular injection may be sufficient to bring about a complete remission in pernicious anemia. Should this prove to be true, it seems not unreasonable to predict that one injection of potent material at intervals of two or more months may be all that is required in this disease to maintain the blood count and the hemoglobin at normal levels.

RUNNING TRUE TO FORM

Professor Kranz: "What did you find out about the salivary glands?"

Stude: "I couldn't find out a thing, Professor; they're too darn secretive."—*Purple Parrot*.

Illinois State Medical Society PROCEEDINGS OF THE HOUSE OF DELEGATES

Peoria, May 16-18, 1933

The first meeting of the House of Delegates of the Illinois State Medical Society was called to order at 3:32 P. M., Tuesday, May 16, 1933, by the President, Dr. John R. Neal.

The President: We usually have roll call after the Credentials Committee report. If it is not at variance with anyone's opinion I would like very much to dispense with calling the roll because these delegates have been accredited during the last half hour. We will call the roll at the next meeting. I will now call for the report of the Credentials Committee.

Dr. E. P. Coleman, Canton: The Credentials Committee has seated 46 delegates from Cook County and 56 from downstate, a total of 102. I move you, Mr. President, that this be accounted as the official list of delegates for this meeting. (Motion seconded by Dr. Austin A. Hayden, Chicago and carried.)

The President: The Chair will entertain a motion that the regular roll call be dispensed with.

Dr. Austin A. Hayden, Chicago: I move that the roll call be dispensed with. (Motion seconded by Dr. Mather Pfeifferberger, Alton, and carried.)

The Secretary: I will call the roll of the Councilors.

The Secretary called the roll and announced that 11 members of the Council were present.

The President: The House is duly organized for the transaction of business. We will have the reading of the minutes of the last meeting.

Dr. Mather Pfeifferberger, Alton: I move that the minutes as published in the July, 1932, issue of THE ILLINOIS MEDICAL JOURNAL be adopted as the official minutes. (Motion seconded by Dr. James H. Hutton, Chicago, and carried.)

The President: We have two distinguished guests. The first guest will bring us a message from the Social Service Department of the Illinois Emergency Relief. She comes to us with an idea that a committee of this House and a committee of other organizations have attempted to work out for the good of the indigent and for the good of those people who are

in distress at this time. She is bringing us also some suggestions for a fee basis. I am pleased to present to you Miss Effie Doan.

Miss Doan: I feel great pleasure and honor in representing the Illinois Emergency Relief Commission before your House of Delegates. I feel a little less embarrassed and little more at home because I have had the pleasure of meeting Dr. Neal, Dr. Philip Kreuseher, Dr. Hutton and Dr. Camp.

One day in Adams County I read in the daily *Whig-Herald* an article about that County's Medical Society having been organized in 1854 or somewhere near that date. I was quite overwhelmed by the fact that there was a county medical society as early. This Illinois Emergency Relief Commission was born on the 6th of February, 1932. There are rumors that the birth was attended by a very worried and harassed group of citizens. Chicago was broke. One hundred thousand families, estimated at about five hundred thousand persons, were going to be without food. Many tax payers were on a strike. Something had to be done. The legislature then in session passed the "gasoline tax" which amounted to \$20,000,000, making available for relief uses \$18,750,000. A commission had to be appointed immediately to work out a plan of organization. Within two days the commission was appointed by the Governor. Workers were gathered from here and there because of their previous experience in public welfare and put to work planning a relief program such as had not been known before in the middle western states. New York State's Commission was already six months old. Now forty-four states have such emergency relief commissions.

Studies have been made of our first year's work by several social research agencies. These have decided that the Illinois program has worth and value ranking high. I am not saying this in support of the program but to give you confidence in the organization with which your state committee is working. We think we have come a long way in the last year but we are only beginning to see that the miles ahead are fraught with need for courage.

I know what some of you are thinking. You are thinking we have given the doctors a pretty poor deal. It is not until recently that we have had your medical needs presented to us. We

realize that doctors have given generously of service and have taken on their books fees they will never collect. It is not that we have not understood that the doctors are just as much in need of fees as grocers need pay for goods, but grocers are not in the habit of giving away their supplies!

Returning to remarks about relief funds—that \$18,750,000 was gone by the first of August. The second amount of money came from the Reconstruction Finance Corporation in Washington. All I can say is that if you could have seen our director, Mr. Edward L. Ryerson, Jr., and Mr. W. S. Reynolds, Executive Secretary of the Commission when they went to Washington on these monthly trips and when they came back, you would know that they worked hard to get the money to meet the budget to supply food and raiment to our unfortunate people. We expected to have a motor fuel fund but I need not remind this group of the court injunction. Then we built our hopes on the sales tax and you know what happened to that. Month after month it was necessary to go back to Washington for Federal funds. We are deeply indebted to the Reconstruction Finance Corporation for their generosity in letting us go over the amount that was permissible for any state welfare program. We have enough money now promised to last until May 19. The new Federal Relief Bill is passed. Our national administrator is not yet appointed but will be probably today. It has been demonstrated that nobody in America wants to see people hungry.

As far as medical service is concerned, the Reconstruction Finance Corporation held us very closely to our budget. They scanned our Illinois Law and found that medical care was the responsibility of the supervisor on county funds. The usual group needing medical service through county aid was the regular long time care cases, so often referred to as indigent or pauper cases. Now there is included this new group of unemployed people. I have gone into a downstate township doctor's office and counted the patients he was caring for, finding that he bore a very heavy load which should have been divided between two or three men. In Decatur we have noted the count for the month of March. There were over 4,000 families on the call list of a county physician. One township doctor had an average of 57 patients

a day in his office. He was making 20 to 30 home calls as well as handling obstetrical and minor operations in a little cubbyhole of an office with one stenographer. The doctors in the community were generous and the hospital was generous. It had come to a stage in Macon County where they felt there ought to be an adjustment. The County Medical Society made a proposal in duly written out form. It was the first definite proposal the Commission had received from a County Medical Society. It came up in our office and it fell to my lot to go down to Macon County to go over the situation with our County Committee and the Public Relations Committee of the Macon County Medical Society. I am not a physician or a nurse, but I am a social worker of long years experience with training in public welfare. There my experience has been in the organization of county social service work. I am used to working with nurses in the various forms of preventive and curative medicine. I have worked for many years with county hospitals, sanitariums and with state health departments. For that reason I was delegated to the task in Macon County. I would like to have time to tell you how we did it and how finally we got the proposition worked out satisfactorily.

I neglected to say that the Illinois Emergency Relief Commission works entirely through county committees nominated by the Board of Supervisors. We have had very excellent county committees. Some of the finest people in every county have stood by valiantly. The county committee has worked along with the public relief committee in Macon County and the result was that the tentative proposal was adopted with an organization built up for one month's experiment. We hoped to start early in April but did not get started until the 10th, because it was necessary to strengthen the visiting nurses' services. On the 10th of May I was back in Macon County to see how the plan was working and found satisfaction in all groups. I have talked to the county physicians and members of the county medical society and it is agreed that the plan shall be tried for another month and possibly two months before any permanent action or relationships will be determined.

There are difficulties in human relationships as you know. Not every doctor in the medical

society might be pleased and not every society might be pleased. In Decatur we divided 4,000 families into two groups. There were 810 families in the indigent group who were referred to the township physician and 3,200 families who would be referred to the doctor of their choice. Some families claimed six different family physicians and wanted to go around to all of them! We asked the doctor if he was the family physician to John Doe and if he was perfectly willing to take this family on his credit list it was so arranged, otherwise he was permitted to charge a fee as per proposal. On the first day there were 64 calls for medical service; 24 of these went to the township physician, 20 to the doctors on the relief list and 20 were sent home as not needing medical attention. One needed a bath, some needed castor oil, etc. The doctors and nurses have drawn up an agreement between them as to which types of complaints the nurses may treat or send home and which should go to the doctor in his office. Here we thought the plan was fraught with some danger. I ventured to say to the doctors, "You have trained these nurses and if they are not ethical it is up to you."

Now, as to a general plan—after six months' experimentation with medical bills the Commission decided to ask the Illinois Medical Society to appoint a committee to work with us on a plan. We want to be fair about medical fees insofar as funds and legal requirements permit. At the present time some bills have been sent in which are being held up because we have no way of knowing whether the case was an emergency as is required by our rules. We handle no money, you understand. All bills are paid directly from Springfield by the State Treasurer, the warrants going to the merchant or doctor as the case may be. The County Relief officer must have authorized an expenditure in line with instructions, otherwise the auditor must withhold endorsement. We wish to have the instructions as clear as possible. It must be understood that the Illinois Emergency Relief Commission has no idea that it can do more than has been done but wishes to do this much in fairness and as wisely as possible.

There are many angles of which the citizens are not aware. We desire you to think it over in your groups. We want to feel perfectly at ease in making you a proposal or in receiving

one. I regret to say that in a few counties they worked faster than we wanted them to and their proposals have overestimated anything the Commission can do now. In a few counties doctors have lost their patience. I want to emphasize, as a representative of the Commission, that we are anxious to give consideration to any proposal coming from your group. It will be given prompt attention. We will go just as far in being fair as is within the instructions we get from Washington and the Commission's necessary regulations.

The President: Another question of equal importance is to be brought before us. This question was considered so important that some months ago the Council decided to ask someone who was an authority on the cost of medical care to speak to us and we invited our next speaker who will be introduced by Dr. Philip H. Kreuscher of Chicago.

Dr. Philip H. Kreuscher: Mr. Chairman and Members of the House of Delegates: Five years ago when the Committee on the Costs of Medical Care was organized, Father Schwitalla was selected as a member of that Committee. He has served in this capacity during the last four years and has made a very thorough study of the cost of medical care, and I believe there is no other who can present to you a better cross section of this problem than he. As you know, he was one of the signers of the minority report and was the only non-medical man who signed this minority report. Eight other signers of this report were practicing physicians. Father Schwitalla, Dean of the St. Louis University School of Medicine and President of the Catholic Hospital Association of United States and Canada, will now address you.

Rev. A. M. Schwitalla, Dean of the St. Louis University School of Medicine, St. Louis, Missouri: Mr. Chairman and members of the House of Delegates of the Illinois State Medical Society: I could bore you this afternoon with a number of statistics. I could present my views which, I believe, could be so arranged as to offset the findings in the 28 volumes the Committee has published. I could also approach this problem in a more or less technical way from the standpoint of the hospital. I feel in a meeting like this it is much more important for me to put before you the reasons why the Committee felt the majority report should not

be accepted, why on the basis of that report the practice of medicine would be so altered in this country that we would have to go into an entirely different attitude toward the medical profession. I have grown up with doctors. I am a Dean of a Medical School. I thought I would rather put before you some philosophical considerations than to go into a statistical study because I think we can make our points much more effective on the basis of analysis rather than on the basis of statistics.

(The full text of Father Schwitalla's paper will be published in a subsequent issue of THE JOURNAL.

Dr. G. Henry Mundt, Chicago: It seems almost useless to move a rising vote of thanks to Father Schwitalla for his most inspiring address. (Motion seconded and carried.)

The President: The time is now 20 minutes of five and we have quite a number of reports and business to be attended to. Immediately after this meeting our two caucuses will be held. In the presentation of the official reports I would suggest that if there are any additional points to be made on the written reports that they be made as brief as possible.

Dr. E. P. Coleman, Canton: I move that we defer the reading of the reports until the next meeting. (Motion seconded by Dr. Mather Pfeifferberger, Alton, and carried.)

The President: I would like to call your attention to the fact that we have no report from the Historian inasmuch as the Historian, Dr. Cutter, is ill in the west. I think it would be well for the Secretary to be instructed to send a telegram to Dr. Cutter.

Dr. Mather Pfeifferberger, Alton: I move that a telegram be sent to Dr. Cutter. (Motion seconded and carried.)

The President: The next order of business is the appointment of the Resolutions Committee. I appoint on this Committee, Dr. C. B. Reed, Chicago, Chairman, Dr. Mather Pfeifferberger Alton, and Dr. James H. Hutton, Chicago. All resolutions should be sent to the Committee. If there are any resolutions to be read at this time they may be presented now.

Dr. G. Henry Mundt, Chicago: I have two resolutions I wish to present. A year ago in the House of Delegates of the American Medical Association I presented the following res-

olution which was approved by the Illinois delegation.

Resolved, that it is the opinion of the House of Delegates of the American Medical Association that physicians on the staffs of hospitals approved for interne training by the Council on Medical Education and Hospitals should be limited to members in good standing of the American Medical Association, this ruling to apply to all hospitals except federal, state, county and municipal institutions.

The Reference Committee regards this resolution as an expression of opinion in favor of a standard which should be striven for, and as such approves it, recognizing at the same time that it may not be desirable at present to make it a hard and fast rule.

The second resolution I wish to present is as follows:

Restriction of amount of clinical material used by medical schools to amount needed for teaching and research.

Resolved, that it is the opinion of the House of Delegates of the Illinois State Medical Society that medical schools should restrict the amount of clinical material used to the amount needed for teaching and research.

Second, that medical schools should not enter into medical practice in competition with private practitioners of medicine.

Third, that the House of Delegates of the Illinois State Medical Society request the House of Delegates of the American Medical Association to request the Council on Medical Education and Hospitals to submit a plan:

(a) To restrict the amount of clinical material used by medical schools to the amount needed for teaching and research, and

(b) To restrict the competitive practice of medicine by medical schools.

Dr. J. S. Lundholm, Rockford: I wish to present the following resolution:

Interne service in general hospitals chartered by the State.

WHEREAS, the State of Illinois maintains a strict supervision over medical education within the state, and

WHEREAS, all the students and teaching staff in the medical schools of the state are under the direct control of the State, and

WHEREAS, all general hospitals are chartered and supervised by the State, and

WHEREAS, the nursing staff and all medical graduates serving in those hospitals are also under State control, and

WHEREAS, it is the duty of the State of Illinois to furnish the privileges of the fifth year medical training in hospitals worthy of State recognition, therefore

Be it resolved, that the House of Delegates of the Illinois State Medical Society recommends that all general hospitals chartered by the State be permitted to accept as internes any graduate of any medical school within and recognized by the State of Illinois, and

Be it further resolved, that it is the opinion of the House of Delegates of the Illinois State Medical Society that the needs of the sick and injured throughout the State can be better served by the placing of these graduates as internes in all general hospitals, and

Be it further resolved, that the better training of the graduates demands that each hospital assist in preparing young physicians who are soon to be licensed to practice within the State.

Dr. W. F. Schroeder, Rock Island: I wish to present the following resolution:

Fees for surgical service rendered at state institutions.

Resolved, that the State Department of Public Welfare shall be asked to pay a reasonable fee for surgical services rendered at State institutions, and that the State shall employ resident surgeons (i. e., members of the regular hospital staff) or outside surgeons who reside in the same county in which the institution is located, and also pay a reasonable fee for outside medical consultation when such may be necessary.

Dr. E. H. Ochsner, Chicago: I wish to present the following resolution:

Arrangement of program for annual meeting.

Be it resolved, the Wednesday of the annual meeting be reserved for the discussion of the subjects of special and particular interest to the general practitioner and that the program for this day be in charge of the general officers of the Society;

Be it further resolved, that Tuesday and Thursday be reserved for the specialties and that these programs be in charge of the section officers of the respective sections.

The President: These resolutions will be referred to the Resolutions Committee for action on Thursday.

Dr. Humiston, I understand, has just come from the State Capitol. He may have some information for us regarding whether corporations have a right to practice medicine.

Dr. C. E. Humiston, Chicago: Those of you who are students as well as readers of your *STATE JOURNAL* know that a case has been pending in the State Court since February. A decision was handed down that corporations could not be legally allowed to practice medicine. We are interested in that. In order that we might have a judicial decision it was advisable that there be an appeal made to the Supreme Court so that the question could be settled once and for all. It is hard for the winner to appeal but we learned that it could be done, so today I filed a record of the case with the Clerk of the Supreme Court in Springfield. It was necessary for someone to be the messenger and your humble servant so acted. The appeal was properly filed and I have the receipt in my pocket.

The President: I have a telegram which was received since the House of Delegates has been in session from the Illinois Pharmaceutical Association, sending greetings to the State Society. What will you have me do with this?

Dr. G. Henry Mundt, Chicago: I move that the Secretary be instructed to wire our felicitations to this Association. (Motion seconded by Dr. James H. Hutton, Chicago, and carried.)

The President: I would like to give the last five minutes of the session over to my good friend, Dr. Charles B. Wright who is Chairman of the Legislative Committee of the American Medical Association.

Dr. Charles B. Wright, Minneapolis: It is a great pleasure for me to be here in this city and to meet with you men, many of whom are friends and many men whom I have met through legislative activities. We have always admired very much and looked up to things in Illinois particularly, although there are many great things in scientific medicine as well of which we are all followers. Two things we are particularly interested in are the legislative activities you carry on in Illinois and your

MEDICAL JOURNAL. I have been a reader of THE ILLINOIS MEDICAL JOURNAL for five years and I want to say this. Up in our country the men on the Legislative Committee and the men who are interested in the economics of the practice of medicine consider THE ILLINOIS MEDICAL JOURNAL the best Journal in the United States. (Applause.) I figure it is due entirely to a man named Whalen. You do not always agree with Dr. Whalen—a man whom you always agree with would not have much behind him—but one thing you can always say of Whalen, he says what he thinks and he says it in a way you cannot misunderstand. He showed me some things this morning, some of the pleasantries sent to him because of his attitude on many things. Whether you agree with THE JOURNAL or not, whether you agree with Dr. Whalen, he is absolutely fearless and this is a time when a fellow needs a friend in the medical profession. In Minnesota we have three men who are very great figures. They stand out as great men in our state. Charles Lindbergh is one, Volstead is another and Herman Johnson is the third. He has been Chairman of our Legislative Committee for several years. We have had up there very troublesome times. We had a legislature that was not organized. It is a new deal we are talking about. There have been problems that have been difficult to handle but I want you to know that when everything is said and done nothing went through the legislature this year that we did not approve of. That is the greatest tribute I can pay to the men who are on the Legislative Committee. That is something in these troublesome times. There were over 50 bills introduced to our legislature that had a very definite relation to the practice of medicine. This is the time when we talk about the new deal, a new deal man to man. We take something from Peter to pay Paul, we take it from this one and give it to that one. Of the 4,000 bills introduced in our legislature before May there were only 288 passed.

Gentlemen, I want to thank you for being at this meeting. I hope everyone of you will come up to Minnesota. I would like to find a group of men who can sit down and think the same way. I have been in medical organization work for many years and I love it just as you do. When I get to the point where I cannot take part in the House of Delegates with a bunch

like this I think I must be through with the practice of medicine.

On motion duly made and seconded the House of Delegates adjourned at 5:00 P. M. to meet again on Thursday morning at 8:30 A. M.

SECOND SESSION

Thursday Morning, May 18, 1933

The Thursday morning session was called to order at 8:50 A. M., by the President, Dr. John R. Neal.

The President: The first order of business will be the report of the Credentials Committee.

Dr. Charles H. Phifer, Chicago: At the first meeting of the House of Delegates the Committee certified 56 delegates from down state, 46 from Chicago Medical Society and 11 members of the Council, making a total of 113. This morning there are certified 62 delegates from down state, 48 from Chicago Medical Society and 11 members of the Council, a total of 121. I move that these members constitute the official House of Delegates. (Motion seconded by Dr. Austin A. Hayden, Chicago, and carried.)

The President: The next order of business is the roll-call by the Secretary.

The Secretary called the roll and reported that a quorum was present, 39 from down state, 38 Chicago Medical Society, and 9 members of the Council, a total of 86.

The President: The Secretary announces that there is a quorum present and the House is constituted for business.

The next order of business is the reading of the minutes of the previous meeting.

Dr. John S. Nagel, Chicago: I move that the reading of the minutes be dispensed with. (Motion seconded by Dr. W. S. Bougher, Chicago, and carried.)

The President: The annual reports of the different officers, Chairman of the Council, Councilors and Standing Committees are printed in the pamphlet that has been distributed to you. At last Tuesday's meeting we deferred action on these reports until today. What is your pleasure?

Dr. Philip H. Kreuscher, Chicago: I move you, Mr. Chairman, in view of the fact that all of these reports have been in the hands of the delegates since last Tuesday and since they have all had occasion to read and digest them, that

we adopt these several reports as printed in the pamphlet. (Motion seconded by Dr. J. H. Evans, Chicago, and carried.)

REPORT OF THE PRESIDENT

To the Members of the House of Delegates:

"During these times of economic distress, just as in good times, the great burden of caring for the indigent sick has fallen heavily on the shoulders of the practitioner of medicine, notwithstanding the fact that his own income has decreased twenty-five, fifty or even seventy-five per cent in many cases. But even under these adverse conditions the physician has performed his task cheerfully. And he will continue to carry on until this depression, the greatest debacle in history, and the greatest failure of big business and its so-called business principles, shall have burned itself out."

Thus spoke President R. R. Ferguson in his report to this House of Delegates one year ago in Springfield. True to his prediction, the medical profession is bravely carrying on, and although the economic conditions have not taken a definite turn for the better, we are hopefully looking forward, and it is quite apparent that the physicians of Illinois realize that the best possible course is to maintain an united organization for the betterment of the profession and the well-being of our citizens.

I have been privileged to attend medical meetings in nearly every part of our state, and my only regret is that I was unable to meet with each of our component societies during my term of office. It was possible, however, for me to attend each meeting of the Council, and to the members of that body of Officers we extend our sincere thanks and appreciation for their mature judgment and sincere work. In addition to the fine work of our Councilors, we are mindful of the high degree of efficiency attained by the standing and special committees of the Society.

The Illinois State Medical Society may well be proud of the outstanding work of the Editor of its Journal. The members of the Society are equally appreciative of the quiet, efficient and untiring effort of our Secretary.

Although custom decrees that the President make a report each year, his report, obviously, can only be a summing up of the work accomplished by the Councilors, the several committees, the Editor, and the secretarial department. Probably, the most interesting report of the year is that in reference to the accomplishments of our Educational Committee, whose work has grown in such magnitude as to gain outstanding recognition from many other states of our nation. The talented and charming secretary of the Educational Committee has through her ceaseless efforts richly contributed to its success.

During the past year the Society has made an effort to cooperate with every ethical organization which has sought its advice and the report on the result of the activities, which will be presented to you at the appropriate time during the sessions to follow, is deserving of your attention and earnest consideration.

Respectfully submitted,
John R. Neal, *President*.

REPORT OF THE SECRETARY

Members of the House of Delegates:

Your Secretary has the honor of again presenting his annual report to the representatives of all component societies of the Illinois State Medical Society. The past year has been one of unusual hardship to all members of this Society, as it has to all other professional and business men of our State. The membership as a whole, has been called on to give more free service, and has done it without complaint, actually giving the only real charity that has been given, for although many have received free food, fuel and clothing, someone has had to pay the bills, and in most instances someone has profited through the transaction.

Remembering the Preamble to the Constitution of our Society stating the purposes for which the Society was organized and realizing the many hardships of those sturdy pioneer physicians with the best of motives activating them in their efforts, those of us who follow their footsteps must carry on the work which they started eighty-three years ago. We are practicing a different type of Medicine today than was their lot, and even though our incomes have been greatly reduced, yet we still have many advantages in modes of travel, conveniences, and accessories which make our work more scientific and accurate than was available in their time.

They too, had depressions, and on a number of occasions when they met in annual session, a few of the more prosperous members voluntarily paid the deficits which had been gradually increasing from year to year.

THE MEMBERSHIP

During the past year, we have lost some members by resignation, and more who have been dropped from the membership roll because they were delinquent, and were unwilling to attempt to become reinstated. As requested by the House of Delegates one year ago, and through special rulings of the Council to meet the present emergency, we have retained members on the membership list who are still delinquent for 1932 annual dues, especially when requested to do so by the component society, which stated that in their belief, the delinquency would be relieved at an early date. We have lost some members during the past years by death, who have been working for many years for the best interests of this Society, three of these being Past Presidents,—J. L. Wiggins, W. L. Baum, and J. W. Vanderslice, another having been a Councilor as well as a component society Secretary for many years. E. E. Perisho, and another who has represented this Society most creditably in the House of Delegates of the American Medical Association for many years, T. O. Freeman. The Society owes the memory of these loyal men more than can be expressed in a short report, for their tireless efforts in the best interests of the Medical Profession of Illinois. We have lost by death several members who have acted as Secretary of component societies for many years, and a number of others who will be greatly missed both in their local societies, and in these annual deliberations.

NEW ACTIVITIES

The Council has made two important recommendations during the past year, one of them recommending

to the County Societies that they conduct their own clinics, and submitting for their consideration a proposed method for conducting Physically Handicapped Children's Clinics. Although there is nothing at all mandatory in this action, a number of county medical societies have organized their own clinics with excellent results. In a few instances, where adequate nursing services are not available, the State Health Department has sent nurses to aid in the conduction of these clinics, and to give some necessary after care. Many societies have named a clinic committee, and have notified other organizations sponsoring clinics of this fact, and urging them to consult with the committee before arranging any clinics in the county. It has been the opinion of many members of this Society for years, that when clinics are conducted, they should be under complete supervision of the County Medical Society, that group of men in each county best qualified by their training, to supervise all ethical health activities, and they should be generally recognized in that capacity.

The Committee on Medical Economics has been enlarged through the appointment of an advisory member of the Committee from each component society. In order to get more authoritative information relative to economic conditions in every county, questionnaires have been sent to each of the advisory members so that such information could be available. These reports are referred to, in the report of the Medical Economics Committee. This Committee in its activities, has the facilities of the Educational Committee available, consequently there is but slight expense to the Society other than necessary postage, in its operations.

THE JOURNAL

During the past year, the Council, at the recommendation of the Publication Committee, has awarded a contract for the printing of the Illinois Medical Journal, to the General Printing Company, of Chicago, at a saving of between \$325.00 and \$350.00 per month, and with an additional discount for prompt payment of the monthly bills. This is a substantial saving, after months of hard work on the part of the Editor and the Publication Committee, for many proposals were submitted and each company submitting a "bid" was thoroughly investigated.

THE ANNUAL MEETING

More effort was necessary in the preparation of the 1933 Annual Meeting than has been the case for previous meetings, and the Peoria Committee on Arrangements, and its chairman, Dr. C. G. Farnum, deserves much credit for their work. We have had more than the usual amount of trouble in getting ethical commercial exhibits for the meeting, on account of present day economic conditions, and because quite a number of those concerns which regularly have exhibits at our annual meeting are preparing exhibits to be shown in connection with the Century of Progress Exposition in Chicago this year, which exhaust their total exhibition appropriation for the year. It has been necessary to procure many scientific exhibits, which should be of much interest to every member attending the Annual Meeting. It is becoming more difficult each year to plan the Annual Meeting,

and find suitable meeting places, preferably all under one roof.

THE COUNCIL

The usual number of Council Meetings have been held during the past year, with the usual good attendance. When members of the Council are absent from any meeting, it is through an absolutely unavoidable cause, as every member is constantly mindful of his prescribed duties, and anxious to do his part. There have been many unusual and difficult problems presented for consideration by the Council, and each in turn, has been cared for, according to the best expression of judgment on the part of the members.

VETERANS' SERVICE COMMITTEE

The Veterans' Service Committee formed two years ago, has been carrying on, during the past year. At the 1932 Annual Meeting, the first annual dinner of the Committee was held in Springfield, and the attendance was greater than had been anticipated. Another similar function is arranged for this meeting and plans have been made to accommodate a large group to hear the two speakers, and enjoy the fellowship of getting together. The Illinois State Medical Society has been working with the American Medical Association and other State Medical Societies on the problem of the Medical and Hospital care of Veterans, and has protested at the expansion program outlined in 1929 for the Veterans' Administration, especially in regard to the enormous increase in Veterans' Hospitals. President Roosevelt in his Economy Bill, passed by Congress recently, has done this quickly and well, and in the opinion of your Secretary, this House of Delegates should by resolution commend our President for his foresight and determination in demanding this curtailment of activities.

THE EDUCATIONAL COMMITTEE

The work of the Educational Committee, and its sub-committee, the Scientific Service Committee have increased quite materially during the past year, and the operating expenses have been reduced. The many speakers who have gone before component societies at the request of the Committee have rarely asked for their actual expenses, although entitled to them. The Society owes a debt of gratitude to these men, who are carrying on the spirit of the Founders of this Society who never considered anything except those high motives which prompted them in the plan of organization, when the Society was formed. It is the opinion of your Secretary, that this work of the Educational and Scientific Service Committees should be continued, as one of the important activities for the next year, as in the opinion of many members, this work is more essential during the period of unrest and unemployment which exists throughout the country.

Although in many of our State Societies the cases of mal-practice filed against members has been increasing during the past two years, this is not the case in Illinois as the number of cases has been decreasing gradually for several years. The Committee and its chairman have not only been interested in caring for the members who have been threatened, but have also been interested in a campaign of education to better enable the member-

ship to avoid trouble of this kind. The Legislative work has also been progressing satisfactorily, and the method of carrying on this function of the Society, has again proved itself to be entirely satisfactory.

We have enjoyed the most harmonious relations with our State Governmental Departments, and on several occasions during the past year, officers or committees from the Society have been called to the State Capitol to give information desired in the particular instance.

We have been urging the County Society Secretaries to send remittances in smaller amounts and not wait until the total amount of dues are collected, on account of the banking situation; but we have had many checks sent in, returned with the notation "bank closed," before the check could be cleared. We have some Secretaries who have sent the per capita assessment in the form of a postal money order, or express draft, when their local banks have been closed. In several instances during the past few months, component societies have had their entire funds tied up in closed banks, and when the cases were presented to the Council, special arrangements have been made to carry these members who had paid their dues, even though they did not get to the Society Depository Bank. Once more we want to thank the many component society secretaries for their cooperation during the past year, and their promptness in answering communications sent to them. We are also greatly appreciative of the assistance and encouragement we have received from the General Officers of the Society, and Members of the Council.

We wish to submit our annual report of membership and financial conditions for the year which closed on April 30, 1933.

RECEIPTS FROM COUNTY MEDICAL SOCIETIES

May 1, 1932, to April 30, 1933

Adams	\$ 889.00	Iroquois	238.00
Alexander	54.00	Jackson	105.00
Bond		Jasper	
Boone	105.00	Jefferson-Hamilton ..	213.00
Brown	21.00	Jersey	42.00
Bureau	182.00	Jo Daviess	
Carroll	175.00	Johnson	43.00
Cass	85.00	Kane	713.00
Champaign	887.00	Kankakee	556.00
Chicago M. S.	23,162.00	Knox	70.00
Christian	189.00	Lake	299.00
Crawford	56.00	La Salle	886.00
Clark	140.00	Lawrence	119.00
Clay	67.00	Lee	254.00
Clinton	105.00	Livingston	42.00
Coles-Cumberland ..	231.00	Logan	91.00
DeKalb	184.75	McDonough	287.00
DeWitt	56.00	McHenry	84.00
Douglas	35.00	McLean	496.00
DuPage	399.00	Macon	599.00
Edgar	105.00	Macoupin	178.50
Edwards	35.00	Madison	507.50
Effingham	79.00	Marion	140.00
Fayette	21.00	Massac	63.00
Ford	35.00	Mason	84.00
Franklin	119.00	Menard	44.00
Fulton	28.00	Mercer	106.00
Gallatin		Monroe	70.00
Greene	49.00	Montgomery ..	84.00
Hancock	94.00	Moultrie	42.00
Hardin		Morgan	233.00
Henry	175.00	Ogle	140.00
Henderson	63.00	Peoria	996.00

Perry	42.00	Tazewell	105.00
Piatt	28.00	Union	91.00
Pike	147.00	Vermilion	478.00
Pulaski	57.00	Wabash	63.00
Randolph		Warren	154.00
Richland	32.00	Wayne	56.00
Rock Island	500.00	Washington	84.00
St. Clair	28.00	White	70.00
Sangamon	525.00	Whiteside	154.00
Saline	42.00	Will-Grundy	651.00
Shelby	77.00	Winnebago	725.00
Schuyler	35.00	Woodford	113.00
Stark	8.00	Williamson	21.00
Stephenson	241.00		

	\$40,177.75
Subscriptions ..	159.75
Exhibits ..	1,775.00
Interest—	
Treasurer's Account	65.22
Bonds	3,413.90
Journal	15,400.00
Med. History	10.00
Bonds, called ..	5,090.00

Total Receipts\$66,091.62

RECEIPTS AND PAYMENTS

May 1, 1932 to April 30, 1933

County Societies	\$40,177.75
Exhibits	1,775.00
Subscriptions	159.75
Interest—	
Treasurer's Account	65.22
Bonds	3,413.90
Journal Advertising	15,400.00
Medical History	10.00
Bonds Called	5,090.00

Total Receipts\$66,091.62

DISTRIBUTION OF RECEIPTS

General Fund	\$26,658.89
Medico-Legal Fund	9,813.76
Legislative Fund	6,542.50
Journal Fund	23,076.47

Total Receipts\$66,091.62

Cash Balance, May 1, 1932 .. 36,638.56

Total\$102,730.18

PAYMENTS

General Fund	\$29,146.92
Medico-Legal Fund ..	8,507.75
Legislative Fund	2,902.75
Journal Fund	26,333.24

Total Payments\$66,890.66

Cash Balance, April 30, 1933 .. 35,839.52

Total\$102,730.18

CASH BALANCES

April 30, 1933

General Fund	\$ 4,778.94
Medico-Legal Fund	11,578.98
Legislative Fund	14,256.46
Journal Fund	5,225.14

Total Cash Balance\$35,839.52

Bonds are held in trust for the Society at the State Bank and Trust Company, Evanston, Illinois, totalling \$74,000.00.

The cash balance as reported is on deposit in the name of the Illinois State Medical Society at the State Bank and Trust Company, Evanston, and at the National Bank of Monmouth, except we are holding checks returned on account of banks being closed before clearance, amounting to \$543.00.

All payments are made from the State Bank and Trust Company, of Evanston, and no payments except transfers to the Evanston Bank from the Monmouth depositing bank,

MEMBERSHIP SUMMARY

Members in Good Standing, May 1, 1932	7,364
Dropped during the year—	
By death	137
By removals	28
Non-payment of Dues	147
By Expulsions	16
	328
	7,036
Reinstated during the year	12
New Members Reported	264
	277
Membership April 30, 1933	7,313

We still have several hundred members carried on the membership list who have not paid 1932 dues. With authority from the Council, where the component Society believes that the delinquent dues will be paid within a reasonable period, we have been more lenient this year, than previously, and have retained these delinquent members on the membership list, who previously would have been dropped. Your Secretary would appreciate a ruling from this House of Delegates for the guidance of the Council in making a ruling for these delinquent members following the Annual Meeting.

During the past few months, we have had many letters from other Societies asking for information relative to our action on delinquent members. One Society with a membership list of less than three thousand, has reported nearly five hundred who have not paid dues for 1932, and these delinquents have been carried to this time. There is one important question involved, in any ruling on the handling of this situation, relative to Medico-Legal protection, and whether delinquent members shall be so protected.

The Illinois State Medical Society has weathered the storm of economic chaos during the past year, much better than most other organizations. The Medical Profession has probably been hit harder than any other profession, but the members have done their duty as they have seen it, and we believe from present indications, that the next year will show a decided improvement in our economic status.

In closing, we desire to again thank the component society Secretaries, Officers, Councilors, and committee members for their cooperation with this office, and once more we want to assure the House of Delegates that it is indeed, a great pleasure to work with such men.

Respectfully submitted,
Harold M. Camp, M. D.,
Secretary.

FRED N. SETTERDAHL
PUBLIC ACCOUNTANT
224 Robinson Bldg.
Rock Island, Ill.
May 4, 1933

Members of the House of Delegates:
Illinois State Medical Society.

This is to certify that I have audited the following accounts of your Society, for the year ended April 30, 1933.

Dr. H. M. Camp, Secretary
Dr. C. J. Whalen, Editor

Miss Jean McArthur, Secretary Educational Committee.

The Bank accounts which represent the accounts of Dr. A. J. Markley, Treasurer, have been verified and found to reconcile with the Secretary's accounts.

Your receipts are less than the previous year on account of a number of component societies as well as members have had their funds in closed banks.

Interest has been received regularly from the investment funds and the average market value of Bonds is 80.2 per cent of the par value. The total par value of Bonds held is \$74,000.

All funds are deposited in the name of the Society and the Bonds are held in trust by the Depository Bank.

The records have been well kept and in my opinion my detailed report furnished the Council represents the true transactions for the year.

Respectfully,
Fred N. Setterdahl,
Public Accountant.

REPORT OF THE TREASURER

For the Year Ending April 30, 1933
Members of the House of Delegates:

Your Treasurer wishes to make the following report:

RECEIPTS

From the Secretary	\$42,122.50
From the Editor	15,400.00
Interest on Deposits	65.22
Interest on Bonds	3,413.90
Bonds Called	5,090.00
Total Receipts	\$ 66,091.62
Balance May 1, 1932	36,638.56
Total	\$102,730.18

PAYMENTS

General Fund	\$29,146.92
Medico-Legal Fund	8,507.75
Legislative Fund	2,902.75
Journal Fund	26,333.24
Total Payments	\$ 66,890.66
Balance April 30, 1933	35,839.52
Total	\$102,730.18
(All funds are deposited in the name of the Illinois State Medical Society.)	
Deposited with the State Bank and Trust Company, of Evanston, Illinois	\$ 18,609.64
Deposited in the National Bank of Monmouth.....	16,706.88
Checks on hand, returned from closed banks, included in receipts	543.00
Total	\$ 35,859.52
Less Checks Outstanding	20.00
Total as above	\$ 35,839.52

There is held in Trust, at the State Bank and Trust Company, Evanston, Illinois, Bonds (par value)

\$ 74,000.00
Total Cash and Bonds

Respectfully submitted,

A. J. Markley,
Treasurer,

\$109,839.52

REPORT OF CHAIRMAN OF THE COUNCIL

To the Officers of the State Medical Society, and the Members of the House of Delegates:

In making this report, the annual report of the Chairman of the Council, I purposely have refrained from submitting anything in the nature of a stereotyped form of report. I am sufficiently conceited to believe that some recommendations contained herein may be of benefit to the State Society. Further, I believe the members of the House of Delegates should be in possession of all the facts, deduced or produced by the Council since the previous meeting of the House.

In the first place I wish to pay my respects and my compliments to the Councilors from the various Districts. In a very great measure the welfare of the Illinois State Medical Society, depends on the activity, the energy, the honesty, the vision for the future, the ability to see what is happening and what is likely to happen, by these Councilors. I wish particularly to pay my compliments to the finance committee appointed from, and by the Councilors.

The Chairman of the Council stated in a letter sent during the year to each component Society, that the duty of the Council is,—first, to manage the finances of the State Society. Next, to carry out the policy of the State Society after instructions or recommendations from the House of Delegates; then to initiate or authorize necessary action or policies during the interim between meetings of the House of Delegates, which suggested policies or actions will be approved or rejected at the next meeting of the House.

To return to the initial and basic control residing within the Council—the matter of State Society finance. Your finance committee has, as shown by the reports of the State Society Secretary and the State Society Treasurer not only conserved the funds of the Society, but also, by good business methods, actually added thereto even in this present period of failing, and falling values. As Chairman of the Council I cannot, in justice to this committee, do anything except to congratulate them in public. More than this, if it is allowable I wish to emphasize the need for not only maintaining our financial reserve, but for adding to it as the years go by, for the time is at hand, or certain to arrive, when the State Society which is the State representation of organized medicine, will, in the face of Federal interference, State interference, proposed State control, cult interference hoping for cult control or at least for cult equality cause a condition where a fund of considerable magnitude will be needed to oppose such inroads. I mention these things because it has been said "If the State Society has a fund on hand why not reduce the annual dues, and spend whatever is needed out of the accumulated reserve?" The delegates present may recall that two years ago, on the recommendation of the Council, the dues were reduced from eight to seven dollars; one year ago in the face of financial conditions, and in the face of a slightly reduced membership your Council could not see its way clear to recommend another reduction. But also remember that during this time many of our sister states were increasing their dues. Today if you were living in Iowa you would be paying annual dues of \$12.00. In Wisconsin

in of \$15.00; in Texas, New York, California and a number of other states of \$10.00.

Gentlemen, the Illinois State Medical Society is not a Corporation for profit; it is not in the money making business; it realizes that many individual members in the last two or three years have had to count their pennies. But knowing all this those members you have elected as Councilors from the various districts, also realize (because to them comes the intimate news of conditions not possible for each individual member to receive) which news, reports, and information compels them in honesty and fairness to you their constituents, to provide for you against the storm and trial you may shortly be called to face.

The medical profession is going through a period of great unrest,—an unrest arising partly within its own ranks, and partly from without, and because of this unrest the need for a close, active and intelligent organization becomes increasingly imperative.

Because of this unrest, because of uncertainty along all lines, because of financial and economic conditions, it is apparent that the ideas and ideals of past years are becoming progressively forgotten by some members of our profession. And the disturbing feature is that it is largely the young men in the profession who are chiefly departing from the ethical standards established by our forefathers. There is no doubt some doctors are driven by dire necessity to cause them to lend themselves to any scheme which promises a livelihood. On the other hand, and I say it regretfully, it is my observation that many depart from the paths of the ancients of our profession, merely from a desire to get rich quick, and I think you will agree with me that any line of conduct tending to raw commercialism is proportionately destructive to medical ethics, social ethics, and in the end destructive to those employing such measures.

There have been, and are men in the medical profession who have achieved the heights. Whether such achievement was a matter of luck, of exceptional skill, or of plain hard work, or of a combination of all three does not matter. Such characters are bound to appear in every line of endeavor. The effort to emulate these men is commendable, but such effort is not commendable if it is made coldly and unscrupulously at the expense of one's fellows, and to the derogation of the profession to which one belongs.

As said the profession of medicine is going through a period of great unrest; no one can foretell what the outcome will be, and especially because of three factors; these three are Contract practice, Corporation practice, and State medicine. Of course there has always been contract practice in one form or another, many of such contracts being strictly legitimate and ethical; every man in this room does some contract practice. if you are the recognized examiner for an Insurance Company you are doing contract practice. I do not fear any inroads in the legitimate rights of the profession in general, nor on those of the individual practitioner in particular because of anticipated activities along this line.

Corporation Practice is of two kinds. The first where a Corporation for reasons of its own and not for the mere matter of dollars and cents, decides to practice

medicine in its own way among its own employees for service connected disabilities. Of course this ties up intimately with Contract Practice for that necessary medical force is on contract. So far as I can see there is no way to oppose such Corporation action. Whether it is right or wrong, it is an attempt to conserve the health and working ability of the employee at the lowest possible cost to the employer.

But the second phase of Corporation practice is different. Here it is the attempt of a Corporation to practice medicine at large, at and for a profit: A Corporation which employs doctors to work for the Corporation, young doctors with little or no practice; middle aged doctors who perhaps have proved failures working for themselves, and old doctors, who because of the burden and heat of competition from younger men, or possibly because of the need of an income to keep the wolf from the door, are willing to surrender their honorable medical birthright for a mess of Corporation pottage. This is the kind of Corporation practice where the employed doctor gets 23 cents, and the subservient and acquiescent hospital gets 7 cents, and the lay stockholders in that Corporation get 70 cents out of every dollar. These are facts which your Councilors of last year, and this year have had to face, and your Council for years to come will have to face them also.

Another thing, and here Gentlemen of the House of Delegates, you may decide I am "all wet." I believe there has been too much sentimentality and too little back-bone in the matter of enforcing discipline among members of the various component Societies.

What do I mean by discipline? First, a remembrance of the Hippocratic oath; then a remembrance of the Code of Ethics as promulgated and published by the American Medical Association,—a code which has never been successfully assailed in the Courts, by the cults, by recalcitrant members of our own profession, or by any other organized or unorganized group. Next, a remembrance of the constitution and by-laws of the State Society and of your various component Societies. The experience of years by thousands of men has proved the soundness of these various maxims and rules, and any member wilfully transgressing them should be subject to discipline by his fellows. Why? Because if you will count the number of members in a component Society, you will note that when one member goes bad almost immediately 10 per cent of the members go "sour" also, and it is certainly better to lose one member if necessary, than to lose 10 per cent of the membership ultimately.

Let us assume that our organization is analogous to U. S. Steel or General Motors, or to Pop Warner's football squad. In either of these assumptions if there is a director, or a player, who has shown strength, who has a following, who has a pull; if that director, or that football player is not doing team work for the benefit of the whole, that organization should and will scrap that individual. Suppose in a Society with 60 members that one goes "haywire" so far as his ethical, and perhaps some of his moral obligations are concerned. If he is allowed to go on, to get away with it, almost at once five

other members will go haywire with him, and then in that community you will find a 10 per cent minority is ruling a 90 per cent majority, for the majority can talk itself black in the face and still be unable to convince the community that the majority is right.

During the past year, your Council advocated a new departure in policy in this State, i. e., the advisability of clinics by the members of the various component County Societies, and for these reasons. First: In order to forestall any showing that any individual, philanthropic group, or any cult could make to the State Legislature urging a crying need for the State to appropriate money and begin the practice of medicine. Second: Because various organizations, with good intent and charitable motives, are feeling more the urge to practice medicine. Third: Because of economic conditions there is no doubt some prospective citizens of the State are, for economic reasons, not being presented for such medical care and supervision as they should have. Fourth: Because we believe that these unfortunates should be cared for by the men who practice medicine in an ethical way in order to be able to show positive and scientific need for any expenditure of funds which the tax-payer has to meet.

Another item which should be called to the attention of the House of Delegates is, the action by the Council in increasing the time for payment of the annual dues, even with the knowledge that such increase of time diminishes for this period of time of increase, the working capital of your Society, and increases the possibility of the number of malpractice suits among delinquent members. This action was taken because of the recognition of unusual hardships on many worthy members.

Another change in policy for this year at least is the limiting of outside, or foreign speakers for the various sections at the annual meeting. This is a money saving measure, and your Council believes that from our membership of 7,500 that just as eloquent speakers and as eminent men can be secured as could be secured from other states. As shown by a tabulation of reports in hands of Secretary, this item alone cost the Society \$739.02 in 1932.

While this item is a subject which has very recently been thoroughly threshed out, still it may be of interest to let you know that your Council went on record as endorsing the minority report of the Committee on Costs of Medical Care.

And now a few words in the way of commendation, of comparison and of criticism. Your Society has only two salaried officers, the General Secretary and the Editor. Your Council has cut the operating expense of the Society to the bone, but has not, and I fervently hope will not, cut the salaries of these two men. Each one is practically a full time man; each gives devoted and exceedingly skillful service in his department. In no State in the Union where there is a membership one-half as large as in the State of Illinois, can the service of two such men be obtained for less than double, and some States are paying treble and quadruple the amount this Society pays, to their Secretary and Editor.

Several States have Assistant Secretaries and Assistant Editors on salary, and several have business managers, or Advertising Managers on salary with the Editor. My commendation is unbounded, and my criticism is solely with an eye to the future. It appears to me a point of wisdom—and especially so in the case of the Editor—for the Society to prepare against the day when because of health, of age, or for any other reason, that these two officers should have had under their supervision and training and should have groomed and educated some other member to occupy their places. I say "especially in the case of the Editor." The Secretaryship merely calls for exceptional ability, for a willingness to do lots of hard work, for diplomacy and good judgment, for a thorough knowledge of general conditions, needs, policies, finances, and the need for remembering 7,500 faces and names—in other words just an all-round A. No. 1 Wonder.

The Editorship on the other hand calls for technical knowledge, i. e. our Editorship does. The knowledge of obtaining and writing advertisements; the ability to write editorials covering medical and professional matters in general, and to make those editorials at once pertinent and conclusive, and at the same time to avoid creating individual, or group antagonism within our membership; the ability to foresee, and to forecast developing movements outside of the medical profession which if carried to consummation, would be inimical to the profession, and withal he must be a financial genius to prevent his particular department from getting the Society, as a whole, "In the Red."

One other thought. This Society has two Committees whose services are worth hundreds, yes, thousands of dollars to the Society. Whose services cost the Society nothing more than mere operating expense; where no salaries are paid, and where their workings, and final results, come to the House of Delegates in such tabulated form that only end results are shown; where the labor, the sweating of blood, the anxiety and grief of their labors, never appears. I refer to the Medico-Legal Committee, and the Legislative Committee.

The State Medical Society in its individual members, (because these individual members do not know all that is transpiring, or all that is being done) cannot conceive of the value to the Society, and to the individual member, of the work done by these two Committees. Their work is almost miraculous. Whereas some years ago it was no uncommon thing to have from 80 to 100 malpractice suits against members annually, now because of successful handling, of Committee diplomacy, and because of skillful legal procedures that annual number has been reduced to a total of from 45 to 70, and the percentage of verdicts in favor of the individual doctor assailed has been greatly increased.

In the case of our Legislative Committee and its work, in the past 15 years of the State Legislature not one bill opposed by the Illinois State Medical Society has become a law.

Gentlemen of the House of Delegates, I want to say to you that if for any reason the guiding minds of these two Committees should decline further service, your

Society would suffer financially, numerically, in prestige, and in the positional strength we now enjoy in our professional and political life in the State.

Respectfully submitted,

Chas. D. Center,
Chairman of the Council.

REPORT OF COUNCILOR FIRST DISTRICT

To the Members of the House of Delegates:

The doctors of the first councilor district are all doing their share in the emergency caused by the depression. They are doing their best to organize medical relief work and to see that it is properly taken care of. Medical meetings throughout the county have been well attended and there has been a decided policy to have more district medical meetings where surrounding counties are invited in.

On April 26th Stephenson County had an all day meeting which was attended by two hundred physicians. On May 3rd Saint Anthony Hospital at Rockford, Illinois held a joint clinical meeting with the Winnebago County Medical Association. This was a clinical meeting beginning at eight-thirty in the morning with lunch at noon and a dinner at night. At this time five out-of-town people took part in the program. Cases were presented with complete histories, laboratory findings and then discussed and diagnosed. The meeting was attended by over two hundred physicians. It is my belief that these district clinical meetings should be encouraged and I know that the Pediatric Society is planning an all day meeting in all the districts during the summer and fall months. These district meetings are a great help. It is very fitting and proper that the clinics be conducted in the various communities. There is always an abundance of clinical material and a careful analysis of these cases is not only very instructive but very stimulating.

Pathological conferences conducted at the various hospitals are becoming increasingly popular and it is hoped that there will be an increase in such meetings throughout the district. It is the belief of your councilor that meetings started with a dinner get a better attendance than the meetings which start at eight o'clock in the evening.

In some counties a large part of the business is condensed after being carefully analyzed by an executive committee composed of three to six members, this committee reporting to the County Medical Society. Such an arrangement often cuts down in the endless discussion which frequently leads far into the night. In some counties there has been an exchange of programs. County A giving the program in County B, and the next month County B giving a program in County A. Such an interchange of programs has its advantages. The best possible way of stimulating the individual member is to have him give a paper. One of the requisites for membership in a County Society would be to attempt to compel each member to give a paper once a year.

We have in the medical profession a fraternity of fellowship where we can exchange ideas that is superior to that found in any other profession. The ethics of the

medical profession are certainly different than the ethics of other professions and I am pleased and thankful that they are.

Respectfully submitted,

Edward H. Weld,
Councilor First District.

REPORT OF COUNCILOR SECOND DISTRICT To the Members of the House of Delegates:

In spite of the poor economic conditions during the past year all of the county societies in the second district have carried on very successfully during this time.

Lee County has held regular meetings and held one special meeting at the Dixon State Hospital where 450 doctors were in attendance. Of the 36 doctors in the county only 4 are not members. They had sufficient funds on hand to waive County Society Dues for 1932 and 1933.

Livingston County has as members all but 4 or 5 of the doctors in the county. Meetings are held regularly and are well attended. In December, 1932 they entertained the North Central Medical Association at a very excellent meeting.

Whiteside County is providing good meetings and planning a clinic for physically handicapped children. They are having no difficulty in keeping up membership.

Woodford County holds monthly meetings which are well attended. Bureau County has an active society. Programs at meetings have been very fine and attendance good. They have recently appointed a committee to look after the matter of free clinics in the county. LaSalle County holds monthly meetings; attendance has been very good—from 40 to 70 doctors present at each meeting. A committee on free clinics has been appointed which is functioning.

There are no societies in Putnam or Marshall Counties.

Of the six societies in the district, four have availed themselves of the service of the Educational Committee in the matter of programs and have found the service highly satisfactory.

Respectfully submitted,

Edgar C. Cook,
Councilor Second District.

REPORT OF COUNCILOR THIRD DISTRICT To the Members of the House of Delegates:

Readjustment of the State Councilor Districts eliminated from the Third District all counties except that of Cook. This year's report, therefore, is the report of one of the component societies—the Chicago Medical Society.

As a natural consequence of the economic conditions there was some loss of membership although not as great as in similar organizations elsewhere.

The scientific meetings of the Society were well attended and the programs presented during the year were interesting and instructive. As a part of the program four special meetings were held during which subjects of interest to the laity were presented. These meetings were marked by the largest attendance ever attained. An accurate count of those present ranged

from one thousand to fifteen hundred. The success of these meetings was due to the careful arranging of the programs and the efforts of the President of the Society, Dr. Herman Kretschmer.

The problems confronting the physicians in the Third District are largely economic and because of the Universities, Dispensaries, Clinics and other groups of both lay and medical organizations engaged in some form of practice there are many problems for solution, but no solution has been offered up to the present time. Perhaps some progress might be made by a more complete survey of methods available for meeting the economic conditions that apparently exist with a large percentage of our population who are at the present time either not receiving medical care or are receiving it through some form of Federal or charitable organizations.

The fifteen Branches of the Chicago Medical Society held monthly meetings, which, according to the reports of officers, were well attended.

It is the earnest hope that the report next year will show not only the retention of membership but a substantial increase.

Respectfully submitted,

Thomas P. Foley,
John S. Nagel,
R. K. Packard,
Councilors Third District.

REPORT OF COUNCILOR FOURTH DISTRICT To the Members of the House of Delegates:

During the past year the Councilor for the Fourth District has visited about one-half of the county societies in this district. Such visits were made only when requested, or when some justifiable reason for such visit seemed to exist. There have been no local difficulties of any consequence, and medical affairs here seem to compare favorably with those elsewhere in the state. The stronger societies continue to hold frequent and regular meetings while the weaker ones in some instances hold only organization meetings. Members of these latter societies usually make up for the deficiency in local meetings by attending those of stronger adjacent societies. In the societies visited, attendance and interest seem to be about on a par with previous years.

The economic and banking situation has worked exceptional hardships upon many of our members. Many hospitals are in a precarious financial condition, and the number of unemployed who need medical attention of all types, present an entirely new problem. In this latter case, it is hoped, that the efforts of the State Society, about which you will hear more at this meeting, will bring about some compromise agreement with the various relief agencies, whereby the unemployed persons needing medical aid, may be able to obtain it properly, without placing the entire burden upon the medical profession, where it appears to rest at the present time.

During the campaign preceding the recent election, many of our members were active in both major political parties. It is believed that this activity is an excellent thing, and may be of benefit to us in future legislative work.

One interesting fact observed during the past year, is that while those of us in essentially rural districts have felt that our own financial lot was particularly hard, there has been a recent influx of doctors from the larger centers, who are apparently finding conditions here superior to those in the cities.

The Councilor has attended all council meetings, and has, as a member of the Educational Committee, been of some service in its work, which is to be reported in some detail at this meeting.

Respectfully submitted,
Everett P. Coleman,
Councilor Fourth District.

REPORT OF COUNCILOR FIFTH DISTRICT

To the Members of the House of Delegates:

On account of some of the Societies not having collected all their dues, it is impossible to say if there will be any members lost this year on account of nonpayment of dues. Those Societies which have reduced their dues on account of present conditions, report almost their entire membership being paid as of April 1st.

Sangamon County Medical Society voted an additional \$3.00 last year to pay for medical journals in connection with a library program. This increased their dues to \$15. For this reason there is a higher percent of nonpayment of dues this year than for the past two years. One society reported a reduction of dues to \$5.00, and are paying the difference to the State Society, and the County Society expenses, out of a reserve fund which they had created. This plan I think worth considering by both the State and County Societies in the consideration of a reduction of dues at the present time.

It has been surprising, considering the serious financial conditions of the past year, to note the splendid work that has been done by some of the counties of the Fifth District,—more meetings, better programs, larger attendance, and a greater degree of mutual helpfulness upon the part of the Societies attending one another's meetings. Along this line I wish to express my deep appreciation as Councilor to the work of McLean, DeWitt, Logan and Sangamon Counties.

In two of our smaller Societies, Mason and Menard, one with a membership of ten and the other with six, where the members do mostly a country practice, it has been difficult to keep up their meetings and enthusiasm.

I cannot refrain from mentioning an outstanding piece of work accomplished by a member of one of our County Societies in the Fifth District, where for the past eight years there have been no meetings held except for the election of officers. I stated last year that an outstanding officer of a County Society is a pivot man for all activities in that locality. This year we have that outstanding officer in the Fifth District, but instead of a pivot man we have a pivot woman. Dr. Lydia H. Holmes, of Pekin, was elected President of the Tazewell County Medical Society, and for the past year has held regular meetings, and for attendance and enthusiasm I have seen none better. Under the leadership of Dr. Holmes the men have responded with the finest cooperation to make their Society a splendid success. I had the pleasure recently of attending their Society and being

present at the opening of a new addition to their hospital.

On account of the loss of two counties, Ford and Iroquois, that were made a part of the new Eleventh District, the Fifth District is now the smallest in numbers of any in the state. Where we reported a membership of 313 last year, we now have a membership of about 274, if none are lost for nonpayment of dues.

The work done by the men in general practice, particularly in the country districts, is to be greatly commended. Where they usually considered obstetrics as a lucrative part of their practice, several of the men have told me that they have scarcely received any pay at all for this part of their work during the past year. I mention this only to emphasize the splendid devotion to their profession that these men have manifested during these trying times. I do not believe there is an instance in any rural community where a doctor has not cheerfully rendered his services to the expectant mother, indigent children or any of the needy poor. This work has been accomplished only by the greatest economy and self-denial of the general practitioner and his family. These men with their devotion to the high ideals of their profession, are entitled to the same honor that was accorded the early pioneer profession of our State.

Respectfully submitted,
S. E. Munson,
Councilor Fifth District.

REPORT OF COUNCILOR SIXTH DISTRICT

To the Members of the House of Delegates:

Since it was my duty and privilege to report to you as Chairman of the Council, and since the views advanced in that report cover, in the main, a report as Councilor for the 6th District, as representative of this district there is but little to add.

To my knowledge the district has added during the year, but one case for our Medico-Legal Department.

One of the eleven counties in the district is still without a county society, and consequently still without representation in the State Society. Two of the other counties, while maintaining Societies, have—usually—but one meeting a year, but each one of these two counties is so located, geographically, that their members can and do attend medical meetings in adjoining counties.

While our hard roads are looked upon with general favor, still it is a deplorable fact that because of the hard roads it is becoming increasingly difficult for the county, with no city of some size within its borders, to maintain its own County Society in a life of activity.

Nothing is said about depression, for the condition in the 6th District is exactly that found elsewhere in the State; further, in spite of the anxieties, and financial conditions, and disappointments, and a more keen competition than is seen in good times, it seems to me that the general feeling of amity between doctors in both the large and small communities, is at least as high, if not higher than usual.

Respectfully submitted,
Chas. D. Center,
Councilor Sixth District.

REPORT OF COUNCILOR SEVENTH DISTRICT To the Members of the House of Delegates :

Your Councilor of the Seventh District has no lengthy report for the past year. Councilor visits in the District have been reduced to special requests of individual Societies due to economic conditions. However, I have kept in touch with the work in the component Societies and am pleased to report all in a thriving condition. A number of the Societies, who in the past have only maintained an organization with few scientific meetings, have during the past year held regular monthly meetings with excellent programs and a live interest has been manifest.

The ever present question of medical service to the indigent and unemployed has received a great deal of attention, especially in the larger centers and a plan developed in the Decatur and Macon County Medical Society has met with approval of the Emergency Relief Commission. Economic problems as relates to the profession has been a live subject for most Societies and many have voiced their disapproval of the Majority Report. Inter-Society relations have been fine and mutually helpful during the past year.

All the Societies in the Seventh District should be commended for their fine spirit and loyalty during these trying times of economic chaos. The year ahead looks much brighter.

Respectfully submitted,

I. H. Neece,
Councilor Seventh District.

REPORT OF COUNCILOR EIGHTH DISTRICT To the Members of the House of Delegates :

I submit herewith Councilor's report for the Eighth District, for the past year.

I am glad to say that there have been no professional difficulties in this district which have been brought to my knowledge. The various County Societies have kept up their regular activities in spite of financial conditions, and have kept their dues paid up very well. Circumstances over which I have had no control have made it impossible for me to visit society meetings as I would have liked to do. I have heard from many individuals in the district and am convinced that hospital, pauper, and other matters which are dependent upon the medical men of each community are being handled as well as possible under conditions which change almost daily. I wish to assure the practicing physicians of this district that their Councilor will have more personal contact with them in the future.

Respectfully submitted,

Cleaves Bennett,
Councilor Eighth District.

REPORT OF COUNCILOR NINTH DISTRICT To the Members of the House of Delegates :

This year's work of the fourteen counties comprising the Ninth Councilor District, is not flattering but well up to the average.

Most of the counties have held regular meetings and with splendid programs, and with much interest manifested in the meetings. It has been impossible to attend all the meetings, but the larger counties have had large

attendance, good speakers and an unusual interest manifested.

Owing to the depression and the closing of numerous banks it has caused a falling off in our membership to a certain extent.

We have made an unusual effort to maintain as large a membership as possible during these trying months and keep the strength of our organization as high as possible.

No discord has arisen during the year to seriously mar the organization's welfare and everything has been moving along in a nice, harmonious manner.

We predict for the coming year a renewed enthusiasm in medical organization and an improvement in medicine altogether, in the Ninth District.

Respectfully submitted,

J. W. Hamilton,
Councilor Ninth District.

REPORT OF COUNCILOR TENTH DISTRICT To the Members of the House of Delegates :

The Tenth Councilor District has had a successful year for organized medicine and educational work. Never before in the same length of time, have so many valuable lectures on medicine been delivered in these counties. All have had meetings this last year and several of them have had as many as nine or ten. The attendance has been good and interest shown in both economic and scientific medicine.

Jackson County had nine meetings with an average attendance of twenty and has nineteen members. The speakers were two local and seven foreign. This county is among the leaders in following the plans for crippled children and other work recommended by the Illinois Medical Society. Jackson is a member of a five-county organization and some of its members attend a meeting every week.

St. Clair county which has a branch society in Belleville, reports a membership of 114. A majority have paid their dues for 1933. St. Clair held ten meetings last year. The speakers were nine foreign and one local. The Society was unfortunate in losing Dr. Edwin Irwin of Belleville. Dr. Irwin was an outstanding figure in the profession for years, having served several terms in congress. He was always willing and able to be of service to the profession when opportunity afforded. The Belleville branch is ably manned by President Lischer of Mascoutah and Secretary Otrich of Belleville.

Pulaski County had two meetings of their own with a small attendance, as they have only eight members and merged the remainder of their meetings with Alexander County and met with them in Cairo. Pulaski is to be congratulated upon the showing they have made for such a small county, retaining their organization of only a few members.

Washington County has made a better record this year than it has for some time past with a record of four meetings, discussing matters of importance to the profession.

Perry County held nine meetings with an average attendance of twenty-five. Perry has but a membership of twelve. One lost by death—Dr. Burch of DuQuoin who was elected president of the county society. Dr. Burch

had been a faithful member and often represented his county in the State Meetings.

Randolph County had two meetings during the past year, one especially of importance, honoring two of their members who had practiced among them for the last fifty years. Dr. W. A. James of Chester and Dr. J. W. Weir of Sparta, both are still in active practice.

Union County held ten meetings with an average attendance of twenty-three. Of the ten speakers four were local, six were foreign. Two special meetings were not included in the above. One special meeting was an Orthopedic clinic conducted by Dr. M. L. Klinefelter during one afternoon and evening. The other was an open meeting for the public, a talk on cancer. This was attended by many physicians and their wives. One of the regular meetings was devoted to a discussion of the report of the Wilbur Committee on the cost of Medical Care. Union County's present membership is seventeen. K. D. Sanders of Jonesboro, Illinois, died during the year. Dr. Sanders had not practiced for some time.

Alexander County had seven regular meetings last year with four foreign and three local speakers. Also bi-monthly dinner meetings, which proved of interest with better attendance than the regular meetings. Four of their regular meetings were of a general nature with the physicians of surrounding counties invited. The membership of Alexander county is eighteen and they lost one during the year—Dr. J. A. Woelfle who had been a faithful active member of his county society for many years.

Monroe County having but small membership of the medical fraternity held eight meetings jointly with the dentists of the county. Their membership is thirteen and they lost two by death. Dr. Otto Kuehn, a Civil War veteran, age ninety years, and Dr. J. S. Sennott, who was seventy years of age and served his county as secretary for several years.

Respectfully submitted,

J. S. Templeton,

Councilor Tenth District.

REPORT OF COUNCILOR ELEVENTH DISTRICT

The newly created Eleventh District, made up of seven counties in the northeastern part of the state, has five live medical societies with a membership of around 235. In two cases neighboring counties have united in forming one larger society. All these societies have regular meetings, some weekly as the Will-Grundy County Society; the majority monthly, and one, the Ford County, quarterly. All have had excellent meetings and the Will-Grundy Society with weekly noonday meetings has given their members a most excellent post graduate course in all the branches of medicine with a list of outstanding talkers which would make any one medical school in Chicago envious. Where the plan is feasible, as in the larger cities, this looks like an excellent idea.

The Councilor has attended at least one regular meeting of each County Society in this district during the past year. He has found each society active, with officers working for the good of the society, and members

both alive to the problems of the local and state societies and eager to cooperate. Membership has held up very well, but there has been delay in payment of dues in some localities where the banks are closed. However, with a little time these societies will soon have all members paid up. Two county societies already have 100 per cent paid up membership for 1933.

There was one malpractice suit started in this district up to April 1st, 1933. I am informed that two additional ones have been started since that date. Three county societies have put on an immunization campaign against diphtheria, assisted by the state authorities. 1919 school children were immunized in one county. In one county, the society cooperated with the local hospital staff in conducting an all day program for the doctors with an attendance of around 100.

Your Councilor has attended all meetings of the Council. He has tried to become acquainted with the problems of the state society and is endeavoring to assist organized medicine, both state and county, in every way possible. He trusts that his value will increase with additional years of service.

Respectfully submitted,

E. S. Hamilton,

Councilor Eleventh District.

REPORT OF PUBLIC POLICY COMMITTEE To the Members of the House of Delegates:

During the past year, your committee has followed in the footsteps of its predecessors, watching the horizon for a sign that would mean work for it to do.

Some years ago, this committee was the only one in the society that gave consideration to matters pertaining to various types of Public Policy, but with the many serious economic interests before us today, the sub-committees, especially the Educational, Medical Economics, Veterans' Service Committee, and others, have so specialized the functions previously coming before this committee, that but little has been left for us to do.

These committees are all very important ones, and it might be well to consider our committee in a coordinating capacity in relation to the work of these newer, special committees. We could probably be of more value to the society working along these lines than we have been doing nothing the past few years.

While all of these children of the Public Policy Committee are of value to the society, the Educational Committee, we think, is of the greatest importance. When we consider the vast amount of work they have done, we are very proud of them.

When we consider that they have reached over 200,000 people in Illinois by health talks, presented by members of the Illinois State Medical Society, the talks before Young Mother's Clubs, Parent Teachers' Associations, and other lay organizations, and the fact that they have kept the County Societies informed of what was going on, makes it an important committee.

The Committee on Medical Economics, under the leadership of Tom Foley, has worked faithfully on the subjects of the cost of Medical Education, and the income of the average physician. They have gathered a great deal of data on these subjects.

The Veterans' Service Committee has done a great deal of hard work during the year, and we believe has been of considerable service in the reforms that are being brought about.

We would comment briefly on the President's Economy program, and his doing over night what we have been trying to sell the legislature for some three years, that is the curtailing of veterans' legislation, appropriation and hospitalization. If this had been done three years ago the country would be much better off today, economically.

In conclusion, we would suggest that a resolution, directed by this body, to the President, thanking him in the name of the Illinois State Medical Society for his endeavors to minimize government expense, and commend the action taken in reducing hospital care for undeserving former service men.

Respectfully submitted,

W. S. Bougher,
Chairman.
Louis D. Smith,
George Michell.

REPORT OF LEGISLATIVE COMMITTEE

To the Members of the House of Delegates:

It is most difficult to give a report of a battle while it is still in progress, and it is equally difficult at this time to give a clear picture of our legislative program, in that the General Assembly is in the midst of making new laws. Due to the marked change of the political make-up of the Senate and House of Representatives, a larger amount of educational work had to be accomplished by your Legislative Committee. Practically all the bills that have been introduced, to which we are opposed, have been sponsored by the newer members in the Legislature.

The usual galaxy of cult bills is in evidence, eight in number. The most formidable of this particular group are the Osteopathic bills, known as Senate Bill 457-458. These bills do not differ a great deal from the ones introduced in the previous session. The outstanding difference is their offer to meet the minimum medical requirements commencing in 1938, but the real purpose of the bill is an attempt to get every Osteopath who has practiced in this State, for at least ten years, an unlimited license to practice surgery and medicine with no additional schooling. One of the bills asks for a separate examining board for Osteopaths.

These bills have gained considerable importance, sufficiently, at least, to demand that the Senate resolve itself as a committee of the whole to consider the measures. This procedure of itself shows conclusively the carefulness and real legislative skill that the sponsors of the bill have been enabled to attain, because only measures of paramount importance are given the privilege of convening the entire body of the Senate as a committee.

The chiropractors are demanding similar recognition in the House of Representatives. They have introduced two bills, one for a board, and one defining their practice. These bills are going to different committees, which procedure makes the work of your Legislative Committee more arduous. Frequently, a committee hearing

is scheduled, and then, for some reason, it is not held, but those favoring and opposing bills must be in attendance if they expect to be heard.

The physio-therapists also have two bills pending in the Senate, one for a board, and one defining physio-therapy.

The most grotesque of all, are the naturopathic bills, and for fear that some of our members are not familiar with what the practice of naturopathy is we are quoting from the bill:

"The physiological and mechanical sciences such as mechanotherapy, articular manipulation, corrective orthopedic gymnastics, bacteriology, dietetics, neurotherapy, psychotherapy, hydrotherapy, and Mineral Baths, electro-therapy, thermo-therapy, phototherapy, cromotherapy, vibrotherapy, chiropractic, osteopathy, orificial surgery, obstetrics, naprapathy, spondylopractic, thalmo-therapy and Bio-chemistry, which shall include the use of foods, of such bio-chemical tissue-building products and cell salts as are found in the normal body; and the use of vegetal oils and dehydrated and pulverized fruits, flowers, seeds, barks, herbs, roots and vegetables, uncompounded and in their natural state."

The usual large lobbies representing all these various cults are in attendance each legislative day.

A large number of bills engage the attention of your Legislative Committee to which is charged the duty of reviewing every measure introduced in the General Assembly to ascertain as to whether any one of them has to do with the treatment of human ailment. More than fourteen hundred (1,400) bills have been introduced since the session convened in January. Out of this number, approximately one hundred (100) of these bills affect the practice of medicine, either in a direct or remote way.

Any bills affecting taxes, which are of interest to physicians, are being closely watched so that there will be no discrimination against professional men should they become laws.

The bills so far introduced that are of interest include a large group of child welfare bills; old-age pension bills; a bill to abolish the licensing of midwives; one demanding a physical examination before marriage; bills to regulate maternity hospitals; controversial bills which afford large lobbies of barbers and beauty culturists their biennial argument as to who should cut hair; a medical center commission for Chicago; an entirely new Dental Practice Act introduced by the dentists; a uniform narcotic drug act, which has been passed by the House and reported favorably in the Senate; many bills regarding the insane and feeble-minded which are pending in various committees; a birth registration bill, making it obligatory to report any physical defects of the newborn; blind relief bills; an income tax bill including physicians and all other professions, occupations, and businesses; bills to create liens in favor of hospitals, physicians, and nurses, in the event of accidental cases; a bill to make it necessary for insurance companies to pay hospitals, physicians, and nurses, before settling with the injured policyholder; and a number of other bills of minor importance.

As above indicated, the session is not over as yet and

probably other legislation of interest to the medical profession may be introduced.

The Legislative Committee started work in the primaries of 1932, attempting to secure complete information regarding candidates in reference to their probable attitude toward decent regulatory laws for those who desire to practice the treatment of human ailment in this State.

A great number of physicians in each District have been in constant contact with the Legislative Committee, and especially was the work more intensive during the time from the November election until the Legislature convened in January.

In those Districts where the physicians have interested themselves in the various problems, to which their attention has been directed by the Legislative Committee but little difficulty is experienced in working with the legislators, thus gaining their support.

The Legislative Committee, however, wishes to extend its sincere thanks to the hundreds of physicians throughout the state who have willingly and promptly replied to all communications. The work in Cook County is supervised by the Chicago member of the Committee and he has done an immense amount of work in properly "districting" the physicians of the metropolitan area so that our work is much more effective when a bill is before a committee, for without needless repetition we are enabled to send the proper information directly to each physician in any particular Senatorial District in the State.

The members of the Council have been very prompt and cooperative in every useful way to the Committee.

The Chairman of the Council, the Secretary, the Editor, and the Educational Committee, have all helped in minimizing the labor of the legislative work, and although it is too soon to predict results, it would rather appear that if our members continue to manifest the same interest in the various problems, in all probability, our work will be satisfactorily accomplished when the Legislature adjourns the latter part of next month.

Respectfully submitted,

Edmund Bowe, M. D.,
Thomas P. Foley, M. D.,
John R. Neal, M. D., *Chairman,*
Legislative Committee.

REPORT OF MEDICO-LEGAL COMMITTEE

To the Members of the House of Delegates:

During the year from May 1, 1932 to May 1, 1933 the Committee reports that there have been seventeen new cases started and that during that period twenty-five cases were disposed of. This compares with seventeen cases started during the year from May 1, 1931 to May 1, 1932 and twenty cases disposed of.

Of the cases disposed of, five were tried, all resulting either in verdicts or findings for the defendant or in plaintiffs taking a nonsuit. Two cases were disposed of favorably to the defendants upon the pleadings. Twelve cases were dismissed for want of prosecution when reached upon the trial calendar. Two were dismissed by stipulation and four were settled.

Of the four cases settled, two were sponge cases which

had been previously tried and were reversed by the Appellate Court. One was a case involving an X-ray burn. These three cases were settled by the insurance companies carrying the doctors. One case involved a burn from an electric needle and was settled by the defendant doctor.

There remain pending and undisposed of, seventy-two cases, which is the smallest number of pending cases there has been for several years. There are no cases pending in the upper courts.

Of the seventeen new cases started during the year, six are cases involving the treatment of fractured bones, two involve the alleged leaving in or supposed failure to remove pieces of glass from wounds. The others are miscellaneous cases involving alleged negligence in diagnosing diphtheria, removal of tonsils, prostate gland, operation upon the uterus, confinement, and alleged unauthorized autopsy.

During the last few months there has been a marked falling off in the number of malpractice cases started.

Respectfully submitted,

J. R. Ballinger, *Chairman,*
R. O. Hawthorne, *Secretary,*
A. H. Geiger,
C. U. Collins,
Oscar Hawkinson,
Walter Wilhelmj,
Medico-Legal Committee.

REPORT OF COMMITTEE ON MEDICAL EDUCATION AND HOSPITALS

To the Members of the House of Delegates:

Since the last meeting of the Illinois State Medical Society two reports have been published that have a great importance to the medical profession. First is the Report of the Committee on the Costs of Medical Care. Originated and financed outside the medical profession it has been widely discussed and has had the unfortunate result of lining up a considerable part of the lay public and most social organizations with the majority of that committee while the profession itself, with its keener insight into the pertinent problems of medical care, have favored the minority report.

The second is the Final Report of the Commission on Medical Education. This Commission originated in the Association of American Medical Colleges in 1925. Its Chairman was President A. Lawrence Lowell of Harvard. On it were presidents of universities, deans and professors of medical schools, representatives of the Federation of State Medical Boards of the United States, and the Secretary and General Manager of the American Medical Association. Dr. Willard C. Rappleye, now Dean of Columbia University Medical School, was Director of Study for the Commission. This final report has been published in a handsome volume of 560 pages. The work was financed by "contributions from most of the medical schools in the United States and Canada, the American Medical Association, the Rockefeller Foundation, the Carnegie Corporation, and the Josiah Macy, Jr. Foundation."

The study and report deal with the education of medical students, especially with medical education as "a

university discipline." It is divided into twelve chapters, the last of which is an excellent summary of the entire report. An appendix of 140 pages is made up of the statistical and other data upon which the Report is based. It is a comprehensive and fair-minded study of medical education with emphasis on the need of modifying "the rigid, overcrowded, and overstandardized curriculum" and of introducing "an educational emphasis into medical education," all directed toward an effort to supply the United States with the necessary number of physicians and specialists qualified to care for the sick, and to protect the general health.

Changes in medical practice and the general medical needs of the country, as contrasted with earlier days of our history, are recognized and treated with fairness. "Specialization and fragmentation of medical practice have created many services," says the Report, "which are not well adjusted to the requirements of individuals and the community.—Not only has the work of the profession been divided into many more or less independent fields, but a variety of personnel, trained and untrained, have important places in the health program. The public should realize that trained physicians who are familiar with the problems involved and the objectives to be sought should be responsible for the direction of this army of workers.—Recent publicity regarding the purely economic aspects of the problem has emphasized the present forms and costs rather than the needs and methods of procuring a service of high quality.—The quality of medical care, in the last analysis, depends upon an intelligent interpretation and correlation of scientific knowledge in its application to the needs of the individual. This can be accomplished only by trained and experienced personnel.—The unit of practice, whatever the type of organization, is the individual patient. It is fundamental fallacy to base any program upon the assumption that the human being can be, or is likely in the future to be, a standardized organism."

The internship is recognized as "probably the most important and in some instances the most defective part of medical training. Many of the appointments are designed to provide resident services for the hospital, without full recognition of the educational requirements of the students." The Commission recommends that "the student, the interne, the practitioner, the specialist should be looked upon from an educational point of view as different stages in the training of personnel. The educational sequence from premedical work to retirement from practice should be regarded as a single enterprise, not a succession of isolated and unrelated experiences."

The medical profession, the universities and the licensing bodies have endeavored to keep medical education abreast of modern knowledge of disease, methods of diagnosis, treatment, and prevention. It was necessary to establish rigid and detailed requirements in order to enforce proper standards. Many of these requirements have become crystallized into rules, regulations and laws. "The inevitable result has been rigidity and uniformity in a field which has been going through phenomenal growth. Faculties and licensing bodies have endeavored to add new subjects and to institute new examinations without deletion of obsolete requirements. The outcome

has been great overcrowding of the curriculum and the creation of a body of external regulations which make it difficult to adapt the training to changing conditions in the community, in the profession and in medicine.—The need at the moment is to awaken an interest and to stimulate a viewpoint among those responsible for medical education, practice, and licensure in the broader and more liberal concerns of medicine, not in more laws, regulations, organizations and standardization."

"In the past the effort has been made in the four-year course to familiarize the student as far as time, energy, and capacity permitted with all the facts and methods in every field of medicine,—but some of these have relatively little value in the training of the student.—The hope of presenting the entire subject satisfactorily in the usual course must be abandoned as an unnecessary and futile endeavor, because no individual can be expected to master all phases of medicine. It is an axiom that all true education is self-education. This immediately makes the student the unit of education, not the courses, the credit hours, nor the faculty, and requires that the methods of instruction should be modified accordingly.—There is a distinct shift in many medical schools now toward placing greater responsibility on the student for his own training in an effort to emphasize learning by the student in contrast to teaching by the faculty."

"The various regulations governing medical training have aimed to define the content, length and amount of premedical education.—The result has been to defeat to some extent at least the purpose of that preliminary preparation, which should be general and not professional in character.—The motivation and content of courses in the premedical sciences need fundamental changes, for in many places these subjects are largely taught from the technological and industrial aspects, particularly in chemistry and physics, or from the point of view of the specialized teacher. There is need of making the instruction in these subjects more valuable as disciplines in general education. It is a matter of different, not more, chemistry, physics or biology for the purpose of both general and premedical education."

"The hope of democracy is in trained leadership. The medical profession is the trustee of the essential knowledge and has the personnel necessary to solve a large national problem. Possessing that knowledge it is in a position to make a vital contribution to public welfare. Medicine will occupy its proper place in society to the extent that it provides leadership and properly trained personnel for the program of medical service, which should be built upon thoughtfully conceived plans of medical and post-graduate education, proper organization of the profession, and the advocacy of unselfish and courageous public and professional policies. A realization of these responsibilities is introducing new thinking into the profession and challenges the highest order of leadership—which should be the

contribution of the medical profession and of medical education to modern society."

This brief summary will indicate the general tenor of the Report of the Commission on Medical Education. It is the most significant contribution to the subject since the publication of the Report of the Carnegie Foundation on "Medical Education in the United States and Canada" nearly a quarter of a century ago. It is recommended to all physicians who are interested in medical education and in the position which the medical profession should occupy in our social organization.

Respectfully submitted,

J. P. Simonds, *Chairman*,
W. R. Marshall,
H. O. Munson.

REPORT OF COMMITTEE ON RELATIONS TO PUBLIC HEALTH ADMINISTRATION

To the Members and the House of Delegates:

Although the Committee on Relations to Public Health Administration is provided in the Constitution and By-Laws of the Illinois State Medical Society, whose duties are to confer and advise with the Director of the State Department of Public Health, and the General Assembly on questions involving Public Health Administration, the work of this Committee in the past has been confined merely to sending to the State Health Department Director each year, its personnel and an assurance of its willingness to be of service.

It is the opinion of your Committee that the Committee can be of service in an advisory capacity, both to the director of the Department of Public Health, and to the Legislative Committee, when bills are introduced in our Legislature affecting Medical Practice and the future health of our citizens.

We therefore wish to make the following recommendations, which in our opinion, will be for the best interests of the members of the Illinois State Medical Society in the future, and also for the interests of the laity at large.

1. That the Secretary of the Illinois State Medical Society, each year, following the Annual Meeting of the Society, notify the Director of the Department of Public Health of the personnel of this Committee.

2. That he receive the assurance that the Committee is always anxious and willing to confer with the Director subject to his call, on any matters of Public and Professional interest relating to the Public Health of Illinois.

3. That the Legislative Committee designate some special type of work which our committee can do to assist the Legislative Committee during the sessions of the General Assembly.

We hope that this House of Delegates will give this report some consideration, and make definite recommendations whereby we can actually function, or abolish the Committee entirely.

Respectfully submitted,

Frank F. Maple, *Chairman*.

REPORT OF EDUCATIONAL COMMITTEE

April 1, 1932 to March 31, 1933

"What one alone cannot do at all, many find it easy to perform through cooperation."

To the Members of the House of Delegates:

An Educational Committee must have a definite program if it is to function properly and this program must be flexible in order to meet the changing conditions and the various demands that may be made. In Illinois, your Committee has not lost sight of the fact that the most valuable health worker in the community is the practicing physician and it is because of the excellent cooperation given by these members of the Illinois State Medical Society that the Educational Committee is able to report some interesting achievements during the past twelve months.

Some very excellent team work between important lay groups and the medical profession has been developed which should be enlarged to cover the entire state. It has seemed during these trying days when all organizations are working on reduced budgets that the spirit of friendliness and cooperation has perhaps been increased to take the place of lack of funds. This should serve as an impetus to doctors who are taking their leadership in local health matters.

The Educational Committee office has served as a clearing house on many questions. The Committee without assuming the role of dictator has been able to work out certain problems with the leaders of lay groups which resulted in lessened misunderstandings between the local members of those groups and local medical societies.

The Chairman of Public Health and Child Hygiene of the Illinois Federation of Women's Clubs, Doctor Lena K. Sadler, has always been cooperative and has discussed with the Committee her plans and programs. Doctor Sadler in her meetings with local and district clubs has used the opportunity to show what medical leadership means and how it may be encouraged. Through contacts made by the Educational Committee she has been able to meet the physicians of the various communities and discuss with them actual ways and means of developing cooperation between organized medicine and the women's clubs. It is difficult to foretell what may be the end results of these conferences, but already we can see a fine spirit, a seeking of medical leadership, and team work in some of these counties.

The Committee has always been ready, when asked, to give help and advice to the Illinois Federation of Women's Clubs. Program outlines and letters have been written and mimeographed, radio papers have been checked over and this practical demonstration of work has assisted materially in keeping local clubs informed of health activities.

The Extension Department of the University of Illinois in its work with the Home Bureaus has also had the assistance of the Committee. The subject of COLDS was especially emphasized during the year and every month the Committee furnished suitable material on the subject to thirty-three advisers in Illi-

nois. The Committee also studied and approved a new examination form used by the Home Bureaus.

The Woman's Auxiliary to the Illinois State Medical Society and the component societies were aided by the Committee. It is hoped that the many hours of service given helped in the development of the work of the Auxiliaries and that their growth and strength will support the program of the Illinois State Medical Society. Program material was prepared and mimeographed, speakers were scheduled, notices were mailed and other help given whenever possible.

The State Department of Public Health has always been of excellent help to the Committee, but more especially so during the four years immediately past. The various divisions of the department and the Director have assisted materially in carrying out certain projects of the Committee. The Committee reciprocated whenever possible; for example, the diet lists for children used by the Division of Child Hygiene, were submitted to the Committee for revision and approval.

The Chicago Board of Health was very glad indeed to be able to include in its report to the United States Chamber of Commerce a resume of the work of the Educational Committee in Chicago. These wide activities no doubt will certainly be recognized if the city of Chicago is awarded a prize in the national contest sponsored by the Chamber of Commerce.

The Adult Educational Council of Chicago asked the Chicago Medical Society to sponsor a series of radio talks on health subjects. The request was referred to the Educational Committee and as a result five talks on popular health subjects were given during the month of March from KYW.

The Illinois State Nurses' Association asked the Committee to send a representative of the Illinois State Medical Society to appear on its annual program. The president of the State Medical Society presented a paper at the annual meeting of the Illinois Tuberculosis Association. The Illinois Society for the Prevention of Blindness received cooperation in promoting the baby sore eye bill. The Institute for Juvenile Research furnished speakers for the Committee. Medical Schools and Hospitals, and special medical societies cooperated with the work of the Committee.

The Pre-Medical Pre-Dental Club of Y. M. C. A. College will, we hope, in future years show the results of the fine lectures on medical and social questions which the Committee has scheduled for them during the past four years.

Branches of the American Association of University Women have sought advice from the Committee as well as program material. University students preparing theses have asked for the loan of package libraries, librarians of high schools have used the services of the Committee, health programs for county teachers' institutes have been arranged, physicians have presented health talks before high school assemblies, young mothers' clubs have sought advice on all subjects relating to child care, hospitals have asked for films and materials to be used in their nursing courses.

The departments of the American Medical Association have been extremely helpful and special

mention might be made of the assistance given to the Committee by Doctor Arthur J. Cramp of the Bureau of Investigation, Dr. Thomas G. Hull of the Exhibits Department and Doctor William C. Woodward of the Legal Department.

Members of the Illinois State Medical Society would probably be surprised to learn of the many calls which come to the office of the Educational Committee concerning drugs and treatment. It is hoped that the answers given take the patient to reputable physicians. Every contact made should develop a better spirit between the doctor and the public and every question satisfactorily answered makes a friend of the inquirer.

The services of the Committee have been well distributed throughout the state. Some counties have used all facilities available. The Committee is of the opinion that medical men should be the leaders in all health work in their communities. While the public is being trained to see the wisdom of this, have the doctors stepped in to take the reins? In many communities this has been done and the results were successful. The Educational Committee cannot develop this leadership, it must be done locally but the Committee is willing and anxious to give any help which may be sought.

The following services were given last year on a reduced budget and with a refund of one thousand dollars to the treasury of the State Medical Society:

SPEAKERS' BUREAU

Four hundred and eighty-five speakers were scheduled for lay meetings:

- Women's Clubs
- Parent-Teacher Associations
- County Teachers' Institutes
- Men's Service Organizations
- Commencement Exercises of Nurses
- 4-H Camps
- Business and Professional Women's Clubs
- School Assemblies (high school, junior, grade schools)
- Mothers' Study Clubs
- Hospital Record Librarians
- League of Women Voters
- Household Science Clubs
- Beauty Operators and Hair Dressers
- Normal Schools
- Y. M. C. A.'s
- Y. W. C. A.'s
- Groups in Settlement Houses
- Junior Colleges
- Lyceum Courses
- Churches

While there have been an increasing number of requests for talks on MENTAL HYGIENE and SEX HYGIENE, the variety of subjects selected indicates the general interest in health—Thrift in Health, Value of Animal Experimentation, Nutrition and Malnutrition, Cancer, Relation of Health to School Work, Adolescence, Diphtheria, Heart Disease, Patent Medicines, Health of the Child, Health and the Depression, Health of the Adult,

Eye, Ear, Nose and Throat Conditions, Prevention of Blindness, Tuberculosis, Control of Communicable Disease, Skin Diseases, First Aid, Posture and the Feet, Periodic Health Examination, Medical Economics, The Handicapped Child.

Comments on the lectures show that the Speakers' Bureau is satisfactorily filling a needed service. "Very interesting and inspiring for a group of this kind." "An exceptionally good talk, well handled." "Well given and well received." "Treated subject with a great degree of understanding and knowledge which made the talk all the more helpful and interesting." "Wonderful speaker and left good impression." "Well delivered, not oratorical, common sense talk." "An excellent talk, interesting and informative." "Doctor was very fine. His talk was just what we wanted and full of information and facts." "Good, interesting, profitable talk by a capable, very human physician." "Splendid speaker. Easy to listen to and he made an unusually favorable impression. Presented his subject clearly, in concise and understandable language."

Doctor Roswell T. Pettit of Ottawa prepared an illustrated lecture on the story of X-ray which he presented to the Educational Committee. His lecture and the slides will soon be available to physicians desiring to present this subject to lay audiences.

PRESS SERVICE

11,055—Articles released to Illinois Newspapers.

1,156—Articles concerning topics designated for Health Week released to Illinois Newspapers in April, 1932.

112—Popular health articles were written and approved by the Committee.

84—Newspapers were sent a special article telling the story of the National Institute of Health.

Special material was furnished the Chicago Herald and Examiner for the Child Welfare sections.

Special press service was given the following county medical societies:

Chicago Medical Society—Articles about the summer clinics and releases about the meetings of the Central and Branch Societies.

Grundy County—Special articles on Measles.

Union County—Special articles on Influenza.

Christian, Pope, Crawford, Edgar, White, Franklin, Union, Jackson, Williamson—Special articles on Typhoid Fever.

33 Counties—Special articles each month on COLDS. Announcements of scientific programs sponsored by the following county medical societies were released to newspapers of adjoining counties:

Johnson, Alexander, Fulton, McLean, Perry, Bureau, Franklin, Henry, LaSalle, Livingston, Madison, Kankakee, Carroll, Randolph, Schuyler, Logan, McDonough, Warren, Knox, Southern Illinois Medical Society, DeWitt, Pike.

All newspapers in every county in the state have received announcement of some medical programs.

Many Illinois newspapers have failed to withstand the depression, others are only carrying full pages of ready-made material which they purchase from syndicates. The Educational Committee has the material and facili-

ties for sending out health columns, for sending announcements of medical society meetings, and of special health campaigns. This service has depended largely upon the use county medical societies cared to make of it. Further development is possible and desirable with the cooperation and assistance of local medical groups. The public is interested in medical affairs. They want to know that you had a meeting, that you discussed "Heart Disease," the "Gall Bladder" or "Cancer" or "Goitre." This is news for the papers, so why not make use of that outlet.

Newspaper men make these comments about the health column which is furnished for publication over the signature of the local or State Medical Society:

"We publish all articles received from you."

"We use your articles almost every week."

"Would like a discussion on 'Skin Test for T. B.'"

"I get the matter but doctors do not believe in ads so why give it to them."

RADIO

561 Radio talks were given during the past twelve months. These talks were written by doctors and submitted to the Committee for approval before being given over stations WAAF, WGN, WJJD, and KYW. Included in the number were the talks during the Young Mothers' Hour from WJJD, sponsored by the Chicago Pediatric Society.

Special material to be used in a radio book was prepared at the request of the manager of Radio Station WJJD. He asked for a short history of the work of the Committee relating particularly to the health talks over the radio.

Through Doctor Charles H. Phifer we were able to use station WAAF owned and operated by the Publishers of the Corn Belt Farm Dailies. After the first talks had been given on Friday afternoons, the manager asked that we begin a second series of special interest to home-makers for broadcasting every Tuesday morning.

Special talks were arranged during Youth Week last spring. Radio talks were furnished LaSalle County Medical Society for use from a local station. Copies of all radio talks, covering no phase of treatment but appropriate to the seasons of the year, are on file in the office of the Committee and are available to county medical societies. The American Medical Association placed the Committee on its mailing list to receive copies of radio talks which came to them and in return the Committee furnished Doctor W. W. Bauer of the A. M. A. with copies of its radio talks. This exchange service has been helpful.

Occasionally talks have taken the form of a series on Heart Disease or the Progress of Medicine showing the tremendous strides which have been made during the past fifty years, or they have covered the different periods of life beginning with the child and carrying on through old age. An interesting comment came in after one of these series, "I have just heard the first of Dr. M.'s talks on 'The Evolution of Medicine,' and wish to take this opportunity to tell you how much I enjoyed it. I shall certainly listen in to the remaining two lectures so as not to miss any part of this interesting story. Your station and the Illinois State Medical Society are

to be commended upon presenting such an able and interesting speaker."

SPECIAL SERVICE TO COUNTY MEDICAL SOCIETIES

Office of Committee sent notices to doctors of meetings sponsored by medical societies of Franklin, LaSalle, Livingston, Perry, Randolph, Bureau Counties.

158 Programs arranged for medical societies (See report of Scientific Service Committee.)

Report compiled on care of pauper cases and compensation to doctors.

Reprints of articles appearing in Illinois Medical Journal sent to Secretaries.

Canti Cancer film and other medical films secured for scientific meetings.

Speakers and diphtheria immunization material sent to counties sponsoring special campaigns.

Periodic Health Examination blanks sent physicians.

Announcements of public meetings of Chicago Medical Society sent with all mail going from the office at these periods.

Lists of handicapped children compiled by special committee appointed by the State Legislature, mailed to county society officers.

Letters sent to physicians about cooperation with lay groups in their counties, particularly the women's clubs.

MISCELLANEOUS

Information on activities of the Committee, programs for scientific meetings and package libraries requested by the following states:

Toronto, Canada—Director of Public Health Education and Deputy Minister.

Norfolk, Virginia.

Manitou, Colorado.

Walla Walla, Washington.

Jackson County, Kansas City, Missouri.

Honolulu Newspapers.

Davenport, Iowa.

Clinton, Iowa.

Ottumwa, Iowa.

Pennsylvania State Medical Society.

Story telling of the work of the Educational Committee was published in Medical Economics.

Hundreds of package libraries sent to physicians and laity.

Thousands of clippings from magazines and newspapers filed, to be used in making up special package libraries.

Outline for Health Work of Woman's Clubs prepared for Doctor Sadler.

Notices of Annual Meeting sent to women physicians of the State.

Committee gave small appropriation for the printing of pamphlets on Animal Experimentation.

Assisted by Doctors F. O. Fredrickson and Thomas P. Foley whenever possible in their work with the Veterans' Service Committee and the American Legion.

Secured scientific exhibits for the Annual Meeting.

Cooperated with the Medical Woman's Club and the Medical, Dental and Allied Science groups of Chicago.

Assisted the Medical Economics Committee in getting information and compiling reports.

Cooperated with the special committee from the Council to outline a program for Crippled Children's Clinics.

American Medical Association furnished Committee with exhibits for the Annual Meetings of the Illinois Congress of Parents and Teachers, the Illinois Federation of Women's Clubs, and the State Fair at Springfield.

Secretary attended meetings of the Parent Teacher Associations, American Legion, Women's Clubs, Annual Health Officers' Conference, Child Hygiene Advisory Committee, Health Meeting of Educational Directors, Annual Meeting Illinois Society for the Prevention of Blindness, Meeting of Illinois Tuberculosis Society, Woman's City Club, Woman's Auxiliary, A. M. A. Secretaries' Conference, Conference on Medical Education and Hospitals, special committee meetings of the Society.

Respectfully submitted,

William D. Chapman, M. D.,

E. P. Coleman, M. D.,

Philip H. Kreuscher, M. D.,

Charles J. Whalen, M. D.,

R. R. Ferguson, M. D., *Chairman*,

Jean McArthur, *Secretary*.

REPORT OF SCIENTIFIC SERVICE COMMITTEE

April 1, 1932 to March 31, 1933

To the Members of the House of Delegates:

Well organized, active county medical societies will do more than anything else to overcome the propaganda of socialized medicine, the taking over by lay groups of what rightfully belongs to medical leadership, and help solve the other scientific and economic problems facing medicine today.

The Committee has continued its efforts to establish a reservoir of information and speakers on all phases of medicine and its various specialties, this to be available to county societies on call. In addition, a number of men have prepared interesting talks on various phases of medical economics. There have been several calls for these speakers.

The Committee has also continued to call to the attention of county societies medical problems which are apt to get the doctor in a bad light before the public or whose study might reasonably be expected to benefit the public health and to add to the doctor's income.

The Educational Committee has offered the services of its office to county societies and has given wide publicity to many medical meetings. We are of the impression that this service has been a material help in increasing the attendance at county society meetings.

The Committee is anxious to add more down-state men to its list and also anxious to use down-state men more frequently. Often calls from county societies do not allow time to get in touch with down-state men. Quite frequently these men find it impossible to go when they are called.

At one of the early meetings a group of orthopedic surgeons outlined for the committee the material in that subject as it should be presented. This has been followed by constant pressure to put the doctor in charge of movements designed to help the crippled child. A number of meetings have been held over the past several years. These have increased in number and in the number who attended them in the past year. The officers of the society, the chairman and other members of the Council have spent considerable time in perfecting a plan for county clinics for the physically handicapped child, these clinics to be under the control of the county medical society. The oldest clinic for crippled children is the one at Monmouth conducted by Doctor Camp and Doctor Kreuscher. They evidently have the fullest cooperation from the community leaders in that locality. The state's program is modeled after that clinic which is not only the oldest but the most successful one in the state. Adams County also has a very active and well conducted clinic at Quincy, which is wider in its scope than the one at Monmouth. Johnson County has had one clinic conducted by Doctor Ralph Peairs to which 29 children were brought for examination.

These clinics are just being organized by the county societies. The last previous session of the state legislature requested the Governor to appoint a committee to make a survey of the state, securing the names and addresses of crippled children. The Educational Committee had this list and forwarded to each county secretary the names and addresses of children listed in his county. This survey appeared to be an opening wedge by which the State of Illinois was to go in for the treatment of physically handicapped children. It is hoped that this action of the officers, councilors and others of the state society will demonstrate to state officials that these children can be looked after better and more economically in their own community and that the service can be at least partially self supporting.

Recently the Illinois branch of the American Academy of Pediatrics under the chairmanship of Doctor George E. Baxter is endeavoring to promote postgraduate courses in pediatrics at eleven centers in the state. Their purpose is to bring to physicians a better understanding of modern methods of caring for sick and well children. It is hoped by so doing the county medical societies will be in a better position not only to defend themselves against imposition on the part of lay organizations but to assume leadership in all child health matters within their county.

One county society arranged for an all day visit at Cook County Hospital where four special clinics were held for them.

Blanks for periodic health examination may be secured in the office of the Educational Committee.

Mental disease is more prevalent than any other in the state. One-fifth of the hospital beds of the nation are occupied by cases of dementia praecox. The Committee suggests to county societies that their members would add to their usefulness, as well as to their income, by devoting more time to a

study of mental diseases. Neuro-psychiatrists say that one-half of the cases of insanity are on a physical basis.

A meeting was held on April 27 which was attended by the leading neuro-psychiatrists of the state, the managing officers of two state hospitals, the director of the Department of Public Welfare, Mr. Willoughby Walling, President Neal, Secretary Camp and Editor Whalen. This was an effort to promote the study of mental disorders by men in private practice. It was hoped that thereby many of these persons might be kept out of state institutions and away from state medicine. The difficulty heretofore has been that neuro-psychiatrists did not phrase their talks in language the rest of us could understand. There are now a number of neuro-psychiatrists in the state who can address a county society in its own language. It is believed that some study of mental disorders would go farther than any other one maneuver to add to the doctor's income and to discourage the spread of state medicine. It is hoped that in the coming year every county society will have at least one meeting devoted to the subject of mental disorders and will attend at least one meeting in the state hospital of its area.

The statistics of the Committee's activities are reported below:

One hundred and fifty-eight programs were arranged for 45 different counties. These programs may be classified according to the following subjects:

Pediatrics	6	Eye, Ear, Nose and Throat	4
Obstetrics and Gynecology	9	Gall Bladder	1
Surgery	8	Genito-Urinary and	
Gastro-Intestinal	8	Proctologic	14
Cancer	8	Orthopedics	11
Tuberculosis	7	X-Ray and Radium	12
Endocrinology	8	Heart	10
Neurology and Psychiatry	9	Medicine	21
Allergy	3	Ethics, Medical Organization	
Dermatology	3	and Economics	16

SCIENTIFIC PROGRAMS

County	Speaker	Subject
Madison	Charles D. Center	"The Child."
Princeton, Ill.	Frank Deneen	
Will-Grundy	M. Herbert Barker	"Nephritis."
Kane	Clifford U. Collins	"Cancer."
Perry	J. E. Glenn	"Diagnosis and Treatment of Kidney Infection."
Perry	M. L. Klinefelter	"Fractures."
Elkhart, Ind.	James T. Case	
Sangamon	Harry M. Richter	
Paris Hospital Staff	Fred H. Albee	"Bacteriophage in Wound Treatment."
McLean	Fred H. Albee	"Bacteriophage in Wound Treatment."
Bureau	G. K. Fenn	"Treatment of Heart Failure."
Bureau	Willard VanHazel	"The Surgical Treatment of Pulmonary Tuberculosis."
Rock Island	Morris Fishbein	"The Future of Medical Practice."
Will-Grundy	Robert W. Keeton	"The Future of Medical Practice."
Kankakee	Samuel M. Feinberg	"Allergy of the Respiratory Tract."
Union	H. N. Rafferty	"Acute Suppurative Osteomyelitis: A Plea for its Early Recognition."
Sherman Hospital Staff, Elgin, Illinois	J. F. Jaros	

- "Endocrine Therapy."
- Knox—Charles P. Blair—"Spinal Injuries."
- Knox—Charles Spencer Williamson—"Pericarditis—The Cardiac Condition Most Frequently Overlooked."
- Livingston—David S. Hillis—"Obstetrics."
- Will-Grundy—James T. Case—
- Will-Grundy—Charles F. Read—"What Illinois Is Doing for The Mentally Handicapped."
- McLean—Carl Hedblom—"Chest Surgery."
- Princeton, Ill.—A. A. Goldsmith—"Peptic Ulcer."
- Kankakee—R. K. Packard—"Medical Economics."
- Carroll—William R. Cubbins—"Injuries Around the Knee Joint."
- Will-Grundy—F. LaV. Heinemeyer—"Cesarean Section" and Film.
- Henry—William Thalhimer—"The Diagnosis of Poliomyelitis in the Preparalytic Stage and the Therapeutic Use of Convalescent Poliomyelitis Serum."
- Henry—Carl A. Helblom—"Differential Diagnosis and Treatment of Acute Abdominal Lesions."
- Sangamon—J. R. Ballinger—
- Rock Island—Percy E. Hopkins—
- Will-Grundy—George Edwin Baxter—"Pediatrics."
- Livingston—James T. Case—"Clinical Pathological Conference on Colonic Obstructions," illustrated with actual specimens, microscopic slides, roentgenograms, and lantern slides.
- Livingston—James P. Simonds—"Clinical Pathological Conference on Colonic Obstructions" illustrated with actual specimens, microscopic slides, roentgenograms, and lantern slides.
- Kane—Aaron Arkin—"Heart Disease, Its Causes and Differential Diagnosis."
- Carroll—S. M. Feinberg—"Allergy."
- Jackson—Hugo R. Rony—"Obesity and Leanness."
- Sherman Hospital Staff, Elgin, Ill.—Eugene B. Perry—"Prostatic Resection."
- Randolph—W. K. McIntyre, St. Louis—"Scientific Study of Pruritis Ani."
- LaSalle—Henry Schmitz—"General Remarks."
- La Salle—Peter A. Nelson—"Diagnosis and Treatment of Oral Cancer."
- La Salle—Jasper E. F. Laibe—"Diagnosis and Treatment of Carcinoma of the Urinary Bladder."
- La Salle—Herbert E. Schmitz—"Diagnosis and Treatment of Cancer of the Uterine Cervix."
- Franklin—F. Z. Havens, Mayo Clinic—
- Aurora Medical Society—J. R. Ballinger—"Medical Jurisprudence."
- Whiteside—J. C. Reddington—"Focal Infections."
- Whiteside—George Thomas Palmer—"Pulmonary Tuberculosis in the Light of Present Conditions."
- Warren—(Crippled Children's Clinic)—Philip H. Kreuscher, Clinician.
- Sherman Hospital Staff, Elgin, Ill.—J. D. Willems—"Industrial Surgery."
- Paris Hospital Staff—Henry T. Chickering—"Acute Infections of the Respiratory Tract, including Lobar and Bronchial Pneumonia."
- Schuyler—George Ewell—"Urological Problems."
- Schuyler—H. E. Marsh—"Clinic of Internal Medicine."
- Schuyler—Arnold Jackson—"Treatment of Cholecystitis."
- McLean—Henry T. Chickering—"Prognosis and Treatment of Lobar Pneumonia."
- Will-Grundy—S. M. Feinberg—"Hay Fever with Special Reference to Development in the 1932 Season."
- McHenry—Wm. A. Evans—"Public Health."
- Franklin—Harold M. Camp, Monmouth—"Why a Medical Society?"
- Franklin—R. K. Packard—"Medical Economics."
- Franklin—John R. Neal—"Problems of Interest to the Medical Profession."
- Will-Grundy—William L. Brown—"Cancer."
- Jo Daviess—J. R. Ballinger—"Medical Legal Medicine."
- Carroll—Clement Martin—"Current Proctologic Problems of General Interest."
- Carroll—Lena K. Sadler—"Mental Hygiene and Adolescence."
- Tazewell—J. R. Neal—
- Will-Grundy—Peter Bassoe—
- DeWitt—Lena K. Sadler—
- McDonough—James G. Carr—
- Rock Island—James H. Hutton—"Practical Points in Endocrine Diagnosis and Treatment."
- Will-Grundy—John A. Wolfer—
- Will-Grundy—Frederick H. Falls—"Premature Detachment of Normally Implanted Placenta."
- LaSalle—Aaron Arkin—"Some Interesting Lesions of the Gastro-Intestinal Tract."
- La Salle—Francis Eugene Seneau—"The Present Status of Eczema."
- La Salle—Roswell T. Pettit—"X-Ray—The Searchlight of Medicine."
- Livingston—J. R. Ballinger—"Medical Legal Medicine."
- Livingston—Thomas P. Foley—"Pioneering in Financial Prophylaxis."
- Kankakee—Canti Cancer Film.
- Sherman Hospital Staff, Elgin, Ill.—Herbert Rattner—"Irritant Dermatitis" (with lantern slides).
- Paris Hospital Staff—Joseph McCarthy, N. Y.—
- Will-Grundy—Maurice L. Blatt—"Principles and Technique of Infant Feeding."
- McHenry—Four special clinics under direction of Aaron Arkin.
- McHenry—Aaron Arkin—"Internal Medicine." (At Cook County Hospital)
- McHenry—Sidney Portis—"Gastro Intestinal Diseases." (At Cook County Hospital)
- McHenry—W. A. Brams—"Heart Diseases." (At Cook County Hospital)
- Schuyler—Arno B. Luckhardt—"Recent Advances in Endocrinology" (with slides).
- Will-Grundy—G. Henry Mundt—
- Rock Island—Abraham Levinson—"Diagnosis and Treatment of Cerebral Hemorrhage in the New Born."
- Will Grundy—Edwin W. Hirsch—"Prostate."

- St. Joseph—Aaron Arkin—"Hodgkin's Disease."
- Will-Grundy—Harry R. Hoffman—"Mental Diseases and Crime."
- Bureau—James H. Hutton—"Thyroid and Ovarian Disturbances at Puberty and the Menopause."
- Bureau—N. M. Percy—"Goiter."
- Will-Grundy—Marshall Davison—"Recurrent Cholecystitis following Cholecystotomy."
- Sherman Hospital Staff, Elgin, Ill.—Lawrence J. Hughes—"Diagnosis of Brain Lesions."
- La Salle—Ernestine Kandel—"Recent Advances in Knowledge of Pernicious Anemia."
- La Salle—Lester R. Dragstedt—"The Etiology of Gastric Ulcer."
- Will-Grundy—James T. Case—"Spinal Anesthesia."
- Perry County—Albert E. Rives—"Non-Surgical Gynecology and Obstetrics."
- Perry County—H. H. Hurd—
- Vermilion—R. K. Packard—"Medical Economics."
- Will-Grundy—R. K. Packard—"Medical Economics."
- Rock Island—Edmund Andrews—"Gall Bladder Disease."
- Will-Grundy—Herman L. Kretschmer—"The Resectoscope."
- Iroquois—Francis L. Lederer—"Otologic Problems in General Practice."
- Iroquois—Philip A. Halper—"Ophthalmologic Problems in General Practice."
- Jackson—J. A. Ikemire—"Endocrinology."
- Vermilion—Edward J. Stieglitz—"Arterial Hypertension and the Logic of Its Treatment."
- Perry—Frank Deneen—"Colon Disturbances and Their Treatment."
- La Salle—Philip Kruescher—"Fractures of the Major Joints."
- La Salle—Harold M. Camp—"Some Modern Medical Problems."
- Lake—Benjamin Goldberg—"The Recent Developments in Clinical Tuberculosis."
- McLean—M. J. Hubeny—"Spondylolisthesis in Acute Infections."
- Will-Grundy—Clement L. Martin—"Ano-Rectal Diseases; Practical Considerations in Their Treatment."
- Paris Hospital Staff—Harold O. Jones—"Obstetrics" and motion pictures.
- Will-Grundy—Lena K. Sadler—
- Belmont Hospital Staff—W. A. Newman Dorland—"The Origin of Ovarian Tumors."
- Warren—Leo Campbell—"Medical Aspects of Diabetes Mellitus."
- Warren—Harry A. Oberhelman—"Surgical—Diabetes Mellitus."
- Warren—Philip Kreuscher—"Clinic for Crippled Children."
- Decatur—Francis L. Lederer—"Modern Concepts in the Diagnosis and Treatment of Sinus Conditions."
- Will-Grundy—Joseph K. Calvin—"Some Aspects of Kidney Diseases in Children."
- Pike—Herman Cole—"Streptococcus Empyema."
- Pike County—Walter Bain—"Diagnosis and Treatment of the Thymus."
- Pike County—Don Deal—"Non-Surgical Abdominal Pains."
- DeWitt—James G. Carr—"Treatment of Jaundice."
- Will-Grundy—Edward J. Stieglitz—"Classification of Nephritis in Pregnancy."
- Peoria City—Arno B. Luckhardt—"Recent Advances in Endocrinology."
- Scott—James J. Callahan—"Fractures."
- Iroquois—Lena K. Sadler—
- Rock Island—Julius H. Hess—"Pediatrics."
- Will-Grundy—Philip Kreuscher—
- Livingston—William H. Holmes—"Etiology and Treatment of Various Types of Secondary Anemia."
- Livingston—James G. Carr—"Etiology and Treatment of Pernicious Anemia."
- Monroe—D. D. Monroe—"Heart Disease."
- Will-Grundy—Harold O. Jones—"Treatment of Pelvic Infections" and the film, "Salpingectomy and High Fundic Amputation for Residues of Tubal Disease."
- Will-Grundy—Jerome R. Head—"Surgical Treatment of Pulmonary Tuberculosis."
- Aurora Medical Society—Don C. Sutton—"Treatment of Pneumonia."
- Coles-Cumberland—Don C. Sutton—"Arteriosclerosis."
- Will-Grundy—George B. Lake—
- Henry—Harold Swanberg—"Radium Therapy in General Practice."
- Union—Jerome R. Head—"Differential Diagnosis of Chronic Diseases of the Lungs, Bronchi and Lungs."
- Lake—Edward A. Oliver—"The Commoner Diseases of the Skin, Diagnosis and Treatment."
- Rock Island—Philip Lewin—"Etiology and Treatment of Arthritis" with lantern slides.
- McLean—Temple Fay—
- Paris Hospital—Temple Fay—
- Will-Grundy—John R. Harger—"Abdominal Pain."
- Monroe—Walter Bain—"X-Ray and Laboratory Diagnosis."
- Jackson—J. J. Singer—"Diseases of the Chest."
- Peoria City—Budd C. Corbus—"Transurethral Resection of Bladder Neck Obstructions—A motion picture Presentation."
- Fulton—Henry W. Grote—"Hopes and Fears in Roentgenology."
- Fulton—E. G. C. Williams—"The Public's Bill of Rights" Radiological Program.
- Fulton—Roswell T. Pettit—"Development and Application of Radiology to General Medicine." (Illustrated.)
- Will-Grundy—R. H. Jaffe—"Carcinoma of the Lung."
- Johnson—Crippled Children's Clinic—Ralph P. Peairs, Clinician.
- Evening Program—Ralph P. Peairs—"Film on Crippled Children."
- Franklin—Oscar Zink—"Therapeutic Radiology."
- Alexander—Edward L. Cornell—"Obstetrics" and

film, "Physiology and Conduct of Normal Labor."

Macon—James H. Hutton—"Progress in Endocrinology in its Relation to General Medicine."

Will-Grundy—Budd C. Corbus—"Transurethral Resection of Bladder Neck Obstructions," A motion picture Presentation.

Northwest Branch, Chicago Dental Society—Cyril L. Hale—"Psychiatric Aspects of Dentistry."

Respectfully submitted,

John R. Neal,
Harold M. Camp,
S. E. Munson,
Philip H. Kruescher,
James H. Hutton, *Chairman*.

REPORT OF VETERANS' SERVICE COMMITTEE

To the Members of the House of Delegates:

This Committee was organized after the East St. Louis Annual Meeting to study the reports and activities of the Federal Government in regard to veterans' Hospitalization and to assist, as far as is practical, the Veterans' Organizations in securing adequate care for service connected cases.

A survey of expenditures for nonservice connected cases and the hospitalization, without discrimination, of all veterans without regard for the origin of their medical or surgical disability led to the publication by your chairman of an article "Does the Veteran Get Something for Nothing?" in the Illinois Medical Journal. The idea in this article was an attempt to impress on veterans' organizations that the unwieldy and fast increasing costs of veterans' benefits was reflected in the government expenditures which in turn were reflected in increased taxation.

The committee was enlarged to include a member from each of the component county societies and at the Springfield Meeting a very successful conference of the entire Committee was held at a luncheon.

During the past year another article "Pioneering in Financial Prophylaxis" appeared in the Illinois Medical Journal, having been read before the McLean County Medical Society.

One phase of this perplexing question has been settled in the passage of the Economy Bill by Congress, which for the first time since 1919 limits expenditures to veterans with disabilities of service connected origin. The unlimited hospital expansion planned by the Veterans' Administration, it is said, has been abandoned and one of the inroads in the establishment of state control of medicine has been blocked.

Your committee feels that its existence has been justified in the efforts it has made to call to the attention of the medical profession and the public the unjustified expense which had been saddled on the United States in veterans' relief bills through Congressional action.

Respectfully submitted,

Thomas P. Foley, *Chairman*.

REPORT OF MEDICAL ECONOMICS COMMITTEE

To the Members of the House of Delegates:

The Committee on Medical Economics submits the following report, which although not complete will give some idea of problems confronting the medical profession. These problems are developing rapidly and physicians should equip themselves to meet these changes and lead the thought toward their solution. There is much dissatisfaction with existing conditions but when an actual analysis is sought, the response is not indicative of intense vital interest among physicians.

In order to get the basic facts, the Committee decided to make a survey by counties. Later from such a report, to draw a definite set of conclusions and recommendations, based on the responses of the component County Societies. A beginning has been made but no conclusive recommendations may be formulated.

There has been considerable talk and complaint about the methods of giving medical care to the poor. The following summary shows that in few counties is the existing plan even fairly satisfactory.

MEDICAL CARE TO THE POOR

The majority of counties have supervisors who see that the poor are cared for by the local physicians. Patients can usually have the physician of their choice although in most instances the physician is supposed to have consent of commissioner for that township before he calls on a "poor case." The township pays, usually one-third less than private cases, *providing they are not out of funds*. The general feeling is that the patients get as good care as is possible with the limited funds available but the arrangements are not satisfactory to the members of the medical profession.

Some counties report they have a County Physician who is paid a yearly salary and the cities of Peoria and Monmouth, for example, have their poor cared for by doctors who are paid a salary or a "flat" price for the year. In Rockford all surgical and obstetrical charity cases are taken care of in the county hospitals. Private physicians and visiting nurses' associations take care of the remaining charity. This plan seems to be satisfactory to all concerned.

In McLean County each township employs a physician, picked by competitive bidding among physicians. Each township also budgets a yearly sum for specialties and hospital care. The poor get adequate care and the plan is satisfactory to the medical society.

Vermilion County has a regular appointed physician but the township in which the individual resides is responsible for the medical fee. The poor receive adequate medical care, but in a great many instances the fee so incurred is not paid by the township. The statement made to the attending physician is that food, fuel, and clothing come first, if there is anything left in the township fund, the doctor might receive a part of his fee.

In another county a city physician is appointed at a salary of \$1,200 a year to render services to the poor of the city. He responds only upon an order given by the Overseer of the Poor. Hence the major part of the work is finally done by other members of the profession. A county physician serves at the County Home, work house and Detention Home. The arrangements are not satisfactory to the members of the profession. In Peoria County the care of those in the County farm and hospital, jail, Detention Home, Blind Pension and Coroner's work are done by a doctor on salary and in townships outside the city of Peoria by the same doctor on salary. In Ford County patients in these same institutions are cared for by a contract surgeon at the rate of \$250 a year. Pauper relief is given by all the physicians in the county but at very low compensation, which is not satisfactory.

In other counties the county farms have hospitals but are limited to certain types of cases, so the other relief work is done by the general practitioners.

Three societies report that the individual doctors take care of the poor—that the patients get fair care, but the majority of doctors are dissatisfied with the arrangements. In three other counties there is no concrete method of caring for the poor. The individual physicians do the work though the charity cases are supposedly in the hands of the various supervisors who seldom pay for medical care. The patients do not always have adequate care and the plan is not satisfactory to the Society.

Kane County has a plan whereby in Elgin and Aurora doctors are hired for a stipulated sum; the rest of the profession are expected to give their services for nothing. In two of the smaller communities in the County, all poor requiring medical care are referred to their family doctors and are paid by the township.

In another county the members formed an organization known as the Academy of Medicine. This group divides up into teams of five to eight members each—a team serving from two to three months at the County Hospital and each team dividing up the work as they see fit. There is a captain to each team responsible for the team and represents the team to the Academy. At the end of each service a clinical program is given. The county hospital has about 30 beds and is a part of the Poor Farm. The equipment is fair and the work done is of high grade. There are two difficulties with this plan—first, some of the members of the Society will not join the Academy and will not "play the game"; second, there is no question but what in a course of a year there are many patients given admission slips by the Supervisor to the county hospital who are not indigent poor.

CONCLUSIONS ON REPORT OF MEDICAL CARE OF THE POOR

may be summed up as follows:

Material needs of the poor are met and paid for; physical needs are cared for by the medical pro-

fession with little or no compensation.

Majority of counties have supervisors who see that the poor are cared for. Service usually good to patients, fees greatly reduced and in many cases there is no compensation to doctors who are even expected to furnish drugs. The entire plan is only fairly satisfactory to the medical profession as a whole, but in many counties it is *not satisfactory*.

Suggestions: Secretaries of county medical societies indicate that they would be especially interested:

1. In finding a solution for rendering of pauper relief in such a way as to leave the patient choice of physician.

2. Compel the local supervisors to compensate the physician for medical and surgical care to the poor, on the same basis as food and fuel.

3. The acute and definite realization of the body politic that theirs is the obligation to care for the ill and unfortunate; not alone from the humanitarian grounds but also as a matter of self protection.

4. The education of the public to the real economic value of the profession to the individual city and county, and of their worthiness to the proper reward.

5. County Boards should be instructed to set aside a definite fund for medical care of the poor and all physicians in the county should be remunerated from such fund in proportion to the services rendered.

6. Proper classification of the unfortunate people who would pay but cannot because of the employment situation. Another class who are down-right poor and can't pay, however honest they may be, and the third class, those who are dead beats and would not pay if they could.

7. See that they pay the doctors who give service to the poor and indigent no less than they pay the grocer and butcher for their commodities. That to make the public understand that medical service cannot be had without paying for it.

CORPORATIONS PRACTICING MEDICINE

The practice of medicine by corporations does not seem to be much of a problem in the down-state counties as shown by the following report from a questionnaire submitted to secretaries of county medical societies:

Forty-eight answered that they have no corporations practicing medicine in their counties.

One county has "A cheap advertising clinic made up of doctors and dentists, owned and controlled by a dentist with others on a salary."

One county has no corporation actually practicing medicine, but they have one corporation that has contracted with two or three physicians to care for their employees on a reduced fee and also the families on a discount basis. Another company has a physician to take care of injured employees only.

Champaign County: "Eighteen months ago a community hospital in Urbana failed because of

financial difficulties and had to close. A group of citizens underwrote the indebtedness and formed a corporation. Part of the members are a group of young physicians, most of whom have had Mayo Clinic training. This corporation has opened a closed clinic."

Illinois Central Railroad and Illinois Traction Systems have physicians hired on salary to treat employees. The companies deduct monthly payments from employees for this service.

One Society writes: "The coal companies employ company surgeons for the casualty work. In one town, each local union maintains a doctor who is paid on a per capita assessment of one dollar a month per member and in return for this, cares for that member and his dependents, aside from obstetrics and venereal diseases which are cared for at half price. These physicians are held in very low esteem by the members of the county society and are not admitted to membership. The patients receive atrocious attention.

RECOMMENDATIONS

No specific recommendations were received from county medical societies concerning the question of corporations practicing medicine.

FORMS OF CONTRACT PRACTICE

At the present time twenty-nine out of fifty-six counties report that they have no form of contract practice of medicine. In the remaining counties the methods vary to meet the particular needs as follows:

In one county several Italian Societies hire a physician for a low figure and several large factory employees' groups have organized and attempted to secure services for less than the regular fee.

In McDonough County the manufacturing plants hire their own physicians for their men but not for the families of their workers.

Peabody Mines contract with Patton group for care of their injured employees but no illness or family care.

In La Salle County two or three men are doing contract practice on salary basis. This does not include care for non-employment injuries and illness.

The Kewanee Public Service Company has two or three physicians to take care of their injured and sick employees at reduced fees. Families also given benefit of low rates.

Supervisor of Sargent Township contracts with the only physician in that township to take care of all poor at \$200 per year. This is only in case of serious illness when not employed and have no financial assistance of their own.

A county physician on contract takes care of patients on the County Farm.

The High School at Rochelle has a contract for emergency work, but no other contracts are known about.

In seven counties the railroad company has its own surgeons to take care of the injured and their

employed men and in three counties the families are also taken care of at reduced rates.

In three counties contract practice is restricted to the Moose and R. R. Companies and in two counties to the Eagles who employ physicians at \$2.00 per capita to care for the families, certain classes of needs being excluded.

In one county the railroads and in another the Coal Mines have an arrangement for contract medical care.

In three counties industrial plants have a form of contract practice for their employees.

In Elgin the Eagles receive medical care for two dollars a year. A member of the society is the physician.

In another county, a hospital gives all kinds of medical care.

RECOMMENDATIONS

1. In counties where contract practice exists, secretaries recommend that the unfair practice of discounting or price cutting by corporation physicians to employees' families be eliminated.

2. We are lax in the handling of our so-called "contract" work by industrial surgeons for different lodges; railroads, insurance companies and factories. We are very much in favor of establishing a minimum fee and insisting that this be kept well regulated and that any cases of non-compliance should be penalized by our Local Society. Our County Society has an established fee bill which on the whole is fairly well lived up to in general practice but seemingly is greatly misused in "contract" practice.

NURSING SERVICE

The question of nursing service has been brought up for discussion at various times, but probably the latest report is that secured from the county medical societies during the past two or three weeks which indicates that thirty-five out of fifty-six counties have adequate nursing service with one county reporting too much nursing service. Seven counties have no nursing service whatever and another reports that the service they have is not adequate. Two counties have occasional visits from the state nurse while others have nurses connected with local schools or have nurses provided by the Red Cross.

The cooperation between the nursing and medical professions seems to be splendid in thirty-eight counties and thirty-three counties report that their nurses do not prescribe. A number of counties report that the nurses probably prescribe at times and in six counties the criticism is made that the nurses do prescribe and treat cases.

No recommendations are possible of deduction from the information given in the questionnaires returned to the Medical Economics Committee.

HOSPITALS

Information received concerning hospitals in Illinois indicates that at the present time the same situation exists in Illinois as in other states—hospitals are seldom more than one-third or one-half

filled. It is encouraging, however, to note that in the majority of hospitals there is good cooperation between the medical societies and the hospital authorities.

HOW MANY HOSPITALS IN YOUR COUNTY?

What is their approximate capacity and what percentage of beds are regularly occupied? Does your Society and its members individually have the desired degree of cooperation from the hospital authorities? Does the Medical Staff have charge of the medical problems arising in the hospital from time to time?

ANSWERS BY COUNTIES

Nine counties have no hospitals.

Three private hospitals—one-third to one-half filled.

One county hospital—filled to capacity.

One sanitarium for nervous and mental cases—one-third to one-half filled.

One T. B. Sanitarium—filled to capacity.

The medical staff has charge of the medical problems.

Livingston County—

Four—Chatsworth private hospital, 10 to 15 beds, 50 per cent occupied; Fairbury Hospital, 20 beds, 50 per cent occupied; Pontiac-St. James Hospital, 50 beds, 50 per cent occupied, percentage filled less right now.

No cooperation between society and hospitals.

No staffs for these hospitals and local doctors have no authority.

One medical hospital, just starting, 12 beds, average 7 filled.

Good cooperation.

Medical staff in charge of medical problems.

McDonough County—

Three hospitals (Before the depression they were all well filled).

St. Francis, 80 beds; Phelps, 60 beds; Jones Hospital, Bushnell, 10 beds.

Sangamon County—

St. John's Hospital and Sanitarium, 600 beds, 80 per cent occupied; Springfield Hospital, 100 beds, 80 per cent occupied.

Staff of Springfield Hospital loosely organized.

Cooperation good.

Three hospitals, 220 beds, 150 and 100, total 470 beds, 70 per cent filled.

Good cooperation between society and hospitals.

Medical staff in charge of medical problems.

One hospital, 24 beds, 25 per cent filled.

Society acts only in advisory capacity.

Good cooperation with hospital authorities.

Six hospitals, 325 beds, 25 per cent filled.

Four hospitals—J. M. Young, Annawan, 12 beds; Geneseo City Hospital, 12 beds (Private); Kewanee Public Hospital, 50 beds, 50 per cent filled; St. Francis Hospital, Kewanee, 60 beds, 50 per cent filled.

Excellent cooperation with 2 Kewanee Hospitals.

No cooperation with the other two.

One hospital, 20 beds, 50 per cent filled.

Society does not have desired degree of cooperation with hospital authorities. No medical staff nor advisory board. One doctor in charge.

Effingham—

One hospital, 80 beds.

Good cooperation.

Medical staff has charge of medical problems.

Two—Anna State Hospital, 1800 beds, Crowded to capacity; Hale Willare Memorial, 10 beds, 60 per cent occupied.

Cooperation good.

Physicians consulted concerning medical problems, though no staff at present.

John Warner Hospital, 25 beds.

Cooperation good.

No special staff.

Adams County—

Two, exclusive of those at the Illinois Soldiers' and Sailors' Home, 400 beds, 60 to 70 per cent filled.

Good cooperation.

Physicians have charge of medical problems.

Whiteside County—

One hospital, 55 beds, 40 per cent filled.

One physician out of three members has charge of hospital.

Medical problems under supervision of staff.

Whitehall Hospital (Private), 10 beds, well patronized.

Cooperation good.

No regular staff.

Two hospitals, 75 beds, 50 per cent filled.

Good cooperation.

Staff has charge of medical problems.

One hospital (Private), 20 beds, 25 per cent filled.

Cooperation not satisfactory.

John Warner Hospital owned by city of Clinton, 25 beds.

Proper cooperation.

No special staff.

Rochelle hospital, 40 beds, 40 per cent filled.

Good cooperation.

No organized staff.

Edgar County—

One hospital, privately owned, 30 beds, 20 to 50 per cent filled.

Any reputable physician can use it.

One hospital, 10 beds, 50 per cent filled.

Good cooperation.

One hospital (Private), 10 beds.

No cooperation.

One hospital, 35 beds, 80 per cent filled.

No cooperation.

Staff only advisory—not satisfactory.

White County—

One hospital, 6 beds.

Cooperation good.

Staff in charge of medical problems.

Two hospitals, 200 beds, 50 per cent filled.

Good cooperation.

Staff has charge of medical problems.

One hospital (Private), 25 beds.

Best of cooperation between authorities and doctors.

Two hospitals, 39 beds, 60 per cent filled.

Good cooperation.

One private hospital, 10 beds.

One public hospital, 30 beds.

Cooperation good.

All reputable physicians on staff of the larger hospital.

Champaign County—

Burnham City Hospital, 86 beds; Mercy Hospital, 85 beds; County Hospital, 55 beds; Carle Hospital (closed).

Fair cooperation.

Only Burnham City Hospital has a staff and from time to time makes recommendations to the Board regarding medical problems.

One hospital, 100 beds, 50 per cent occupied.

Cooperation good.

Six hospitals, 600 beds, total; 50 per cent occupied.

Medical staff in charge of medical problems.

Three hospitals, 115 beds, total.

Cooperation poor.

Herrin Hospital, 50 beds, 75 per cent occupied.

Cooperation good.

Three societies report one hospital each, 128 beds, total, 50 per cent filled.

Cooperation good.

Medical staff in charge of medical problems.

Paxton Community Hospital, 20 beds; Roberts Hospital, 6 beds (owned and operated by Dr. J. R. Colteaux).

The hospital is young and is having a desperate time to survive. It is open to all members eligible to Ford County Medical Society.

Lake View Hospital, 158 beds, 69 filled on average; St. Elizabeth Hospital, 165 beds, 56 filled on average.

Excellent cooperation.

Medical staff in charge of medical problems.

Browkaw Hospital, 90 beds, 50 per cent occupied; Mennonite Hospital, 80 beds, 45 per cent occupied; St. Joseph Hospital, 125 beds, 70 per cent occupied; Municipal T. B. Sanitarium, 25 beds, full most of the time.

Excellent cooperation.

Staff in charge of medical problems.

Two hospitals, 90 and 130 beds, 40 per cent filled.

Cooperation good.

Medical staff in charge of medical problems.

St. Joseph's Hospital, Alton; St. Anthony's Hospital, Alton; Harrison Hospital, Collinsville; Madison Co. Sanitarium, Edwardsville; St. Elizabeth's Hospital, Granite City; St. Joseph's Hospital, Highland.

Cooperation good.

Medical staff in charge of medical problems.

Three hospitals, 100 beds, total, 20 per cent filled.

Good cooperation.

Medical staff in charge of medical problems.

Isolation Hospital, 45 beds; Proctor Hospital, 100 beds, average 65; Methodist Hospital, 187 beds,

average 77; St. Francis, 300 beds, average, 159; City T. B. Sanitarium, 92 beds, average 91; State Hospital, 2700 beds, average 2610; Michell Farm (private mental), 20 beds, 20; Peoria Sanitarium (private mental), 25 beds, average 20.

Excellent feeling and cooperation in all departments.

Interlocking committee from staffs and nurses with use of other hospitals by other staffs.

One hospital (private), 5 beds.

No friction.

COLLECTION OF BILLS

The collection of bills is a universal problem. Few societies have any definite system whereby the physicians are materially aided in the collection of their bills. Forty-nine county medical societies out of fifty-six report that they have no system to aid in the collection of bills. In two counties the Chamber of Commerce has a dead beat list for use of their members. One county medical society has its own Credit Rating and Collection Bureau with a full time manager and assistant. In one county the physicians use the merchants collection bureau and another has an exchange list of poor pay and dead beats with fair cooperation.

It is interesting that the chiropractors have a collection agency in one county.

RECOMMENDATIONS

1. It has been suggested that perhaps it would be a good idea to spread some publicity to physicians against the many collecting agencies which prey on the profession. Have the good ones investigated and give some cards to show they are O. K.

2. Another secretary recommends some system of collection, information as to the legal technicalities, etc., so that more of what is collected comes to us instead of to some collection agency.

3. Four county medical society secretaries suggest uniform scale of fees and some form of state wide and county collection agency.

MINIMUM FEE SCHEDULES

Would your County Medical Society favor the establishing of a state wide Minimum Fee Schedule for Insurance Examinations, reports, or for the care of industrial cases covered by insurance, was included in the questionnaire and the following replies were received:

Thirty-nine counties answer "yes." Six "no."

Two county societies have established a minimum fee of \$5.00 for insurance examination. One asks \$3.00 for disability reports while another asks \$1.00.

One county society says they would not be interested for themselves, but if such a scheme would operate to the benefit of the majority of the physicians of the state, they would, of course, favor it.

Two societies say the subject has never been brought up for discussion.

The Peoria society has a fee table that is well maintained.

One society thinks it not necessary as they have a credit and collection bureau. Another society

doubts whether much good would be accomplished with establishment of a state wide minimum fee.

RECOMMENDATIONS

One doctor recommended a law requiring Life Insurance Companies and Health and Accident companies to settle the physicians' bill before paying the claimant, (Bill now at Springfield, S. B. 431), or at least making some provisions along that line. The physician's claim against an insured should be on a par with the undertaker's. (Bill at Springfield, S. B. 172.)

2. State Society action regarding Insurance Claims as to minimum charges.

3. Have all industrial cases and insurance cases choose their own physician rather than be limited to one or a group of physicians. This permits fair and free competition.

COLLECTING ACCOUNTS FROM CASUALTY INSURANCE COMPANIES

Forty-two counties report that they have had no trouble in collecting accounts from casualty insurance companies but eleven have had trouble and one county reports occasional trouble. The one criticism is that in some cases it has taken too long to collect.

REDUCTION OF CHARGES FOR PROFESSIONAL SERVICES

Many county medical societies while not reducing their charges have made concessions to the poor, and have allowed discount for prompt payment. Others have reduced their charges from 20 to 50 per cent.

RECOMMENDATIONS

1. It has been suggested that charges be scaled down somewhat in keeping with prices received for commodities—charges to advance as income for clientele increases. "Be humane among humans."

2. Put the practice of medicine on a business basis for economic reasons so it can successfully compete with the various cults.

3. Less free examinations; less free inoculations; equality with the grocer and hospital for services for indigent.

CLINICS

Nineteen counties have no clinics, but the majority of counties have clinics of one type or another, few of which are conducted regularly. The reports from secretaries would indicate that although few societies have appointed committees to confer with those arranging and conducting the clinics, the service and care given to the patients is satisfactory.

The majority of the clinics are for the crippled children or the tubercular, and are sponsored by the county medical societies, the Elks, Public Health Councils, and the county tuberculosis doctors.

At the present time three counties report that they are working on plans for establishing clinics for the crippled children.

RECOMMENDATIONS

1. One secretary stated that his "society believes that in times of stress every effort should be put forth to strengthen our own organization and make it more efficient. By giving friendly cooperation to all legitimate organizations and individuals doing charitable, school and public health work we may guide them so as to avoid some of the mistakes often made by well-meaning lay organizations doing semi-professional work. In giving this service we help to keep medical activities under the control of medical men and keep the public conscious of the medical profession as a public spirited factor in the community. This will make for greater cooperation from these organizations where we may wish it."

2. Elimination of all clinics sponsored by lay organizations and by the State.

HOSPITALS PRACTICING MEDICINE

In order to find out if hospitals in Illinois were really practicing medicine such a question was included in the survey and it is interesting to note that forty-eight out of fifty-six counties report that no hospitals in the counties practice medicine. One county reports that only the State Hospital practices and that to inmates only. This evidently is not a problem in Illinois.

UNFAIR COMPETITION

Few physicians are known to be cutting the charges for medical or surgical care in such a way as to be unfair to their competitors, in fact, thirty-six counties report no complaints while two societies have no regularity of fees. Twelve counties seem to have this problem and the physicians cutting charges are members of the medical society. In one county the reductions are made by doctors hired by large companies, and in another the only doctor guilty of unfair cutting of charges is not a member of the Society.

RECOMMENDATIONS

1. Prevent cutting fees—penalize the guilty man who does so.

MEDICAL ECONOMICS PROGRAMS

While we hear more about medical economics than any other topic of medical conversation, when it comes down to actual facts, few societies are enough interested to give over one evening to the discussion of medical problems with which they are confronted showing that after all doctors are more interested in the scientific phase of medicine. The Scientific Service Committee of the Illinois State Medical Society offered to arrange programs on Medical Economics for medical societies, but few requests have been made. 37 counties report that they have had no meetings in which the subject has been discussed and sixteen societies have had meetings with discussion of such subjects as "Present Trend of Medical Practice." "The Practice of Medicine from the Layman's Standpoint," "Medical Economics by Leland," "Methods of Eradicating the Dead Beat," "County Charity," "Procedure in the matter of Claims for Medical Services Rendered Decedents." "Juvenile Crime and Prevention, Psy-

chiatry Court," "Medical Care of Indigents," "Collection from County for Pauper Bills."

The secretary of one county medical society has made it his business to keep informed on medical economic problems confronting the state society and made regular reports to his society.

CONTACTS WITH LAY ORGANIZATIONS

Contacts with lay organizations seem to be desirable in most counties and in the majority of counties the physicians are very willing to appear before lay organizations to talk on various health matters in an educational way. Only in four counties did the physicians feel that lay groups did not want these talks. In others the County Medical Society has a committee to encourage such presentations.

The Educational Committee has promoted contacts with other organizations with the idea in mind that organized medicine should be the leader in health activities and that such guidance was necessary for successful health programs. At least thirty-eight out of fifty-six county societies have adopted that same policy with the result that these specially appointed committees have helped solve some serious problems.

One county states, "We are able to boast of a very well regulated County Medical Society. The lay groups in our community are practically 100 per cent under our control. We have no free clinics running at this time which allow use by the middle class of people who could afford to pay a doctor. We have not allowed wholesale immunization of our school children by outside groups. Our slogan is that each physician's office is a health center and if he deems it advisable to give free service to those judged worthy by him he gladly does so; otherwise a reasonable fee is charged and expected to be paid. This also applies to pre-school examination of children."

RECOMMENDATIONS

1. Encourage presentation of health talks before lay groups.
2. Establishment of public relations committee in each county.
3. Have us left alone. There are too many organizations trying to help the doctor and none getting us anything but criticism.

GENERAL ECONOMIC CONDITION

The opinion seems to be held that the present economic condition of physicians is a part of the general economic condition of the country, and as one doctor says, "Our condition is only part of the puzzle." In rural sections of the state the present "farm prices" tend to make the general condition even more serious for the physician.

One statement was made that contract medicine and the lack of organized effort on doctors' part to fight politicians' socialistic tendencies were partly responsible for the present medical economic condition.

RECOMMENDATIONS

1. Overcome the general economic depression and counteract drift toward Socialistic Medicine.
2. Lessen the cost of the practice of medicine—rents, taxes, insurance, public utilities.

3. Lower the first cost of medicine.

4. If the U. S. Government would discontinue giving medical treatment and hospital to ex-service men with non-service connected disabilities it would help the local medical profession. But, if the government insists on doing this it should be done by the local medical profession and hospitalized locally.

5. Solve the general depression!

SUGGESTIONS FOR ACTION

1. In a general way we appreciate our legislative work and protection against malpractice suits more than anything else. In other ways we appreciate our Society more as a Fraternal organization and would prefer that the State deal with us as individuals rather than as an organization.

2. Preventive medicine as carried out by the family physician.

3. More rigid care given to matter of cults, drug store prescribing, etc.

4. Physicians' bills should be first class so they could be paid along with other first class bills.

5. Too liberal and varied use of drugs is handed to patients who walk off and have the charge written on the doctor's books.

6. Some form of farm relief. We believe if the Beshers plan for farm relief is adopted as a federal measure it will directly help every down state doctor and will directly or indirectly help every doctor living in Chicago. We earnestly suggest that the Illinois State Medical Society go on record as favoring this plan.

Your Committee on Medical Economics has endeavored during the past year to get reliable information from all Counties of the State which will better enable it in the future, to make certain suggestions, or recommendations whereby the interests of the members of this Society may be materially benefitted. The Committee is indeed grateful for the cooperation given by many of the advisory members from the Component Societies, although no replies or data have been submitted by many Societies. We hope during the next year, to be able to make more definite suggestions, and all suggestions received from County Societies or any members, will be greatly appreciated, and they will receive prompt attention at all times.

Respectfully submitted,

Thomas P. Foley, M. D., *Chairman.*

REPORT OF THE EDITOR

To the Members of the House of Delegates:

Since the prophecies and warnings so long made public in THE ILLINOIS MEDICAL JOURNAL have yielded expected and bitter fruit for the country at large, so that both cognizance of this bureaucratic control of the nation and protest against this tax-heavy tyranny echo from one end of the continent to the other, it is not without a certain degree of satisfaction on the part of the Editor that this report is presented.

This is not to be wondered at since a prophet justified is rare enough anywhere and usually is his own reward. It is gratifying to see how economists in general are discovering that a legislative and commercial crime against the medical profession is just as apt to become

a synonymous offense against the laity which is what your Editor has said all along. Correction of such tendencies is occupying the governmental body, not only in the United States but of the world. Unfortunately the day is not won altogether. And now as never before does the public mind need concentrated and continuous education as to which way lies rationalism. So surely this is no time for THE ILLINOIS MEDICAL JOURNAL to consider sheathing its sword.

Unfortunately one of the most dubious contributions to the literature of economics that this journal has had to pass upon during the last year has been findings of the Committee on the Costs of Medical Care. Even the lay press has rushed to the task of denunciation of the majority report on the basis that it is incompetent, unpatriotic, un-American and ineffective as well as misleading, socialistic and non-medical.

Readers of THE ILLINOIS MEDICAL JOURNAL are thoroughly familiar with the coherent and unremitting attacks made by this periodical both on the majority report of this committee as well as upon other treacherous schemes against the probity of medical ethics and medical skill.

Unfortunately it seems from the present point or perspective that if the profession is to live and to thrive that such crusading must continue with renewed energy. We are standing at the crisis of civilization. History is being made in a more momentous fashion even than during the bitterest days of the war. The doors are open for communism and the red flood will prevail unless against it are raised bars of justice, common sense and self-respecting yet unselfish individualism.

To rob the medical profession of its claims to common sense and to deprive it of any and all individualism, as well as integrity and competency, has been and is, the aim of socialistic and lay usurpation of medical practice against which for nearly a quarter of a century the editor of THE ILLINOIS MEDICAL JOURNAL has preached without pause.

This crusade of course has not been based merely upon the editor's own convictions but has been as a crusade the literal mouthpiece of the convictions of wise and far-seeing savants of the medical profession, and from the first has been aimed less as a protective measure for a few famous medical leaders than as a veritable sword and buckler for that bulk of the profession that proudly calls itself "the rank and file."

This rank and file through their very devotion to the details of their work, though the almost vicious demands upon them by the hampering details of daily general practice, only too often gets out of touch with this prospective labor in their behalf by their elected leaders. It is only natural, even if unjustifiable in the light of facts for this rank and file to seethe with unrest over conditions that they fail to understand because they fail to examine them. They do not see the fight itself, though the fight is for them if not by them.

To the man in the street it looks as if the man in the council chamber had forgotten the interests of any but himself and his fellow councilors but the man in the street should remember that the council chambers of medicine are not hot beds for economic tyranny but rather ploughed fields thirsting for seeds of medical

prosperity, stability and perennality. There is no difference between the medical man in the street and the medical man in the council chamber and nobody knows that more clearly than the man in the council chamber. Changing a shirt never yet changed the man who wore it. Doctors in the council chambers are merely doctors wearing temporarily a different shirt. The doctor in the council chamber never forgets that it is only a new shirt and not a new skin that he is wearing and the doctor in the street should remember this. In medicine more than in any other state of life the motto is ineradicably, "One for all, and all for one." And this for years has been the adamant doctrine of THE ILLINOIS MEDICAL JOURNAL.

One of the oldest adages extant is that a man cannot straddle two stools, nor yet carry water on both shoulders. So it is not vanity quite so much as gratitude with which the editor of THE ILLINOIS MEDICAL JOURNAL takes count of the exceedingly large percentage of paramountly scientific papers that have been printed in this periodical thanks to the sincere cooperation of hundreds of the best minds in medicine as well as some of the most expert of practitioners, clinicians and research men. From a standpoint of scientific medicine the content of the past year of THE ILLINOIS MEDICAL JOURNAL is remarkable for its findings in therapeutics, diagnosis, dietetics, surgery and general practice. THE ILLINOIS MEDICAL JOURNAL has not been published for economics alone but for the mother science itself.

In the face of this editorial efficiency it would be too much to expect that THE JOURNAL could show an equally gifted sheet in the business office. Yet even from the commercial standpoint THE JOURNAL shows up as no laggard. In the face of the business revolution that has shaken the world THE JOURNAL has not done so badly. There has been but a slight depreciation in revenue over that of the previous year, in itself a remarkable showing for the year that has marked the peak of the slump.

With this brief resume of the past year put forth, it may not be amiss to glance slightly into the future.

If THE ILLINOIS MEDICAL JOURNAL is to continue to serve the profession to the utmost degree, apart from maintaining the high scientific standard set by its gifted contributors it must not cease for a moment its bitter warfare in the cause of medical economics and the protection of organized medicine. For organized medicine is medicine in the rank and file.

Which means that the fight must go on to destroy bureaucratic control and lay usurpation of the rights and privileges of ethical medicine. These poisonous growths have far deeper roots than appear at a casual glance.

Especially must attention be directed against the tendency to take the practice of medicine out of the hands of physicians and to place it in the hands of either the federal or local government or lay-supported, lay-controlled and lay-managed clinics, corporations and even of universities entering into practice and competition with its own graduates, of endowed foundations, lay-motivated and sponsored and other socialistic and non-scientific agencies.

Especially too, must watch be made that the physician

himself does not find himself supporting these lay institutions that take his practice away from him, through the levy of exorbitant taxes to maintain this usurpation of his citizenship and professional rights. Nor must it be overlooked that the encroachment of local, of county and of state public health departments menace with communistic principles the valid tenets of scientific and individual practice.

At best the report of an editor can be but a bird's eye view of what has been and even less than that of what is to be. Perhaps it is not amiss to state that in the past year, the editor has striven to make himself and your periodical worthy of your confidence. This official organ of the doctors of Illinois has standards that must be upheld, ideals to be realized, and to be exercised that protective function that safeguards the interests of medicine by knowledge of the pits that are dug, the ambushes that are laid and the ways by which avoidance lies.

Respectfully submitted,

Chas. J. Whalen, M. D.,
Editor Illinois Medical Journal.

REPORT OF THE HISTORIAN

The Annual Report of the Historian has not been submitted owing to the illness of the Historian, Dr. Irving S. Cutter, although Dr. Cutter assures the Society that his report will be submitted for publication with other annual reports in *THE ILLINOIS MEDICAL JOURNAL*.

The President: The next order of business is the election of officers. Nominations for President-Elect are in order.

Dr. Cleaves Bennett, Champaign: I have been instructed by the downstate caucus to place in nomination the name of Dr. Charles D. Center of Quincy for President-Elect. (Nomination seconded by Dr. Mather Pfeifferberger, Alton.)

Dr. Mather Pfeifferberger, Alton: I move that the nominations be closed and that the Secretary be instructed to cast the affirmative ballot for Dr. Charles D. Center for President-Elect.

Motion was seconded and carried, the ballot was cast and the President declared Dr. Center elected.

The President: Nominations for first Vice-President are in order.

Dr. R. L. Green, Peoria: I wish to place in nomination the name of Dr. C. G. Farnum, Peoria, as first Vice-President. (Nomination seconded by Dr. Mather Pfeifferberger, Alton.)

Dr. Cleaves Bennett, Champaign: I move that the nominations be closed and the Secretary instructed to cast the affirmative ballot for Dr. Farnum.

Motion was seconded and carried, the ballot

was cast and the President declared Dr. Farnum elected.

The President: Nominations for second Vice-President are in order.

Dr. C. C. Rentfro, Chicago: I wish to nominate as second Vice-President Dr. H. V. Gould, Chicago. (Nomination seconded by Dr. A. A. Hayden, Chicago.)

Dr. A. A. Hayden, Chicago: I move that the nominations be closed and the Secretary instructed to cast the affirmative ballot for Dr. Gould.

Motion seconded and carried, the ballot was cast and the President declared Dr. Gould elected.

The President: Nominations are in order for Secretary.

Dr. E. P. Coleman, Canton: I wish to nominate Dr. Harold M. Camp to succeed himself. (Nominations seconded by Dr. Mather Pfeifferberger, Alton.)

Dr. Mather Pfeifferberger, Alton: I move that the nominations be closed and the President cast the affirmative ballot for Dr. Camp.

Motion seconded and carried, the ballot was cast and the President declared Dr. Camp elected.

The President: Nominations for Treasurer are in order.

Dr. W. E. Kittler, Rochelle: I wish to place in nomination the name of Dr. A. J. Markley to succeed himself. (Nomination seconded.)

Dr. E. H. Weid, Rockford: I move that the nominations be closed and the Secretary instructed to cast the affirmative ballot for Dr. Markley.

The motion was seconded and carried, the ballot was cast and the President declared Dr. Markley elected.

The President: Nominations are now in order for Councilor for the Third District.

Dr. John P. Coughlin, Chicago: I would like to place in nomination the name of Dr. L. E. Day, Chicago, to succeed Dr. T. P. Foley retiring. (Nomination seconded.)

Dr. E. H. Ochsner, Chicago: I move that the nominations be closed and the Secretary instructed to cast the affirmative ballot for Dr. Day.

Motion was seconded and carried, the ballot was cast, and the President declared Dr. Day elected.

The President: Nominations are in order for Councilor of the Sixth District.

Dr. Walter Stevenson, Quincy: I wish to place in nomination the name of Dr. T. B. Knox, Quincy, to succeed Dr. Charles D. Center. (Nomination seconded by Dr. R. L. Green, Peoria.)

Dr. Mather Pfeifferberger, Alton: I move that the nominations be closed and the Secretary instructed to cast the affirmative ballot for Dr. Knox.

Motion seconded and carried, the ballot was cast and the President declared Dr. Knox elected.

The President: Nominations are in order for Councilor for the Ninth District.

Dr. J. T. Blakely, Fairfield: I wish to place in nomination the name of Dr. Andy Hall, Mt. Vernon, to succeed J. W. Hamilton. (Nomination seconded.)

Dr. Lee Frech, Decatur: I move that the nominations be closed and the Secretary instructed to cast the affirmative ballot for Dr. Hall.

Motion seconded and carried, the ballot was cast and the President declared Dr. Hall elected.

The President: Nominations are in order for Councilor for the Tenth District.

Dr. C. S. Skaggs, East St. Louis: I wish to nominate Dr. J. S. Templeton, Pinckneyville, to succeed himself. (Nomination seconded by Dr. Andy Hall, Mt. Vernon.)

Dr. C. E. Wilkinson, Danville: I move that the nominations be closed and the Secretary instructed to cast the affirmative ballot for Dr. Templeton.

The motion was seconded by Dr. Pfeifferberger and carried, the ballot was cast and the President declared Dr. Templeton elected.

The President: Nominations are now in order for members of the Standing Committees.

(Nominations were presented in each case, the Secretary instructed to cast the affirmative ballot and the President declared them elected.)

The following Committees were elected:

Public Policy: C. J. Drueck, Chicago; W. S. Bougher, Chicago; George Michell, Peoria.

Medical Legislation: John R. Neal, Springfield, Chairman; Thomas P. Foley, Chicago; Edward Bowe, Jacksonville.

Medico-Legal: Oscar Hawkinson, Chicago; Walter Wilhelmj, East St. Louis. (Two members elected for three years.)

Relations to Public Health Administration: Frank Heda, Chicago; Lee Frech, Decatur; F. F. Maple, Chicago; Thomas Meany, Chicago; Ralph Hinton, Manteno.

Medical Education and Hospitals: J. P. Simonds, Chicago; W. R. Marshall, Clinton; H. O. Munson, Rushville.

The President: The Chair would like to call attention to the very excellent and worth while report of the Committee on Medical Education and Hospitals as sent in by Dr. Simonds. It would be worth your while to read this one report, even though you did not read the others.

Nominations are in order for the election of a permanent historian.

Dr. Mather Pfeifferberger, Alton: I move that Dr. I. S. Cutter, Chicago, be re-elected. (Motion seconded by Dr. C. E. Humiston, Chicago.)

The Secretary cast the ballot and the Chair declared Dr. Cutter elected.

The President: The next order of business will be the election of delegates to the American Medical Association.

(Nominations were presented in each case and the following delegates elected.)

C. S. Skaggs, East St. Louis; R. L. Green, Peoria; Mather Pfeifferberger, Alton; C. E. Humiston, Chicago; Charles B. Reed, Chicago.

The President: The next order of business is the election of alternate delegates to the American Medical Association.

(Nominations were presented and the following alternates elected:)

Gustav Kaufman, Chicago (Humiston); Frank L. Brown, Chicago (Reed); E. P. Coleman, Canton; R. J. Coultas, Mattoon (for one year); Andy Hall, Mt. Vernon; F. P. Hammond, Chicago (for one year); E. H. Weld, Rockford (Skaggs.)

The President: The next order of business is fixing the per capita tax for the coming year.

Dr. Andy Hall, Mt. Vernon: I move you that the per capita tax be assessed at five dollars (\$5.00) and if that does not meet the expenses of the Society that we use some of the surplus. (Motion seconded by Dr. I. W. Harter, Stronghurst.)

Dr. A. A. Hayden, Chicago: What is the recommendation of the Council?

Dr. Charles D. Center, Quincy: The recommendation of the Council after due deliberation and remembering all the hardships that most of you have encountered offered as a supplementary report to the Chairman of the Council is that the dues for the coming year remain at seven dollars.

Dr. J. S. Lundholm, Rockford: I wish to second Dr. Hall's motion.

Dr. C. S. Skaggs, East St. Louis: In view of the fact that many physicians are financially hard put to pay dues, I rise to support the motion of Dr. Hall, that dues be made five dollars and our expenses reduced to meet the decrease in income.

Dr. W. E. Kittler, Rochelle: I would like to hear Dr. Whalen's opinion.

Dr. C. J. Whalen, Chicago: In view of the fact that the medical profession is now up against a most severe test and that the education that we have to carry on is more important now than at any time in the history of the Society, I feel that the dues of the Illinois State Medical Society are probably less than those of any other state in the Union. If this educational work is to be carried on we have got to have the seven dollars we had in the past; otherwise, we are going to have to let the educational propaganda lax and the medical profession will be the loser thereby.

Dr. N. S. Davis III, Chicago: I would like to make a substitute motion, that in accordance with the recommendation of the Council the dues remain at seven dollars.

Dr. Philip H. Kreuscher, Chicago: I second Dr. Davis' motion.

Dr. Andy Hall, Mt. Vernon: I am opposed to the substitute for this reason. I will admit that there never was a time when medical men have been harder hit than at the present time. In my own county of twenty-five members only thirteen have paid their dues. Perhaps it is not so bad in some other places, but I think you will find more delinquents at the present time than ever in the history of the Society. Every society that is functioning in the United States today is functioning because they changed their expenses to fit the conditions. This Society should do the same thing. In looking over the financial report of this administration for the

last seven years the expenses of the State Medical Society were greater last year than in the preceding six years. We should get our expenses in keeping with the changed conditions over the country. If five dollars will not meet the expenses, we should cut down and use some of the surplus that has been laid up from year to year. If times pick up we can increase the dues next year or the year after.

The President: The Chair is going to recognize at this time Dr. C. B. Reed, Chicago, Chairman of the Resolutions Committee, in that I have been told that there is a resolution on this subject. Though we are not ready to vote on the resolutions, I think it is pertinent to have the Resolutions Committee's angle and have this matter thoroughly thrashed out before we pass on to the next order of business.

Dr. Charles B. Reed, Chicago: The following resolution was presented to the Committee:

WHEREAS, the county medical societies are now embarrassed by the inability of many of their members to pay their dues, as a result of the depression which has curtailed their incomes, and

WHEREAS, the Illinois State Medical Society has not reduced its overhead expenses in keeping with other organizations.

Therefore, be it resolved, that it is the sense of the House of Delegates that the dues for the incoming year be fixed at five dollars (\$5.00) and that salaries and personnel and other expenses be reduced in keeping with our income.

In the opinion of the Resolutions Committee the Illinois State Medical Society has the best organization of any state society, and it believes that overhead expenses should be reduced where advantage is gained, but the Committee believes, in principle at least, that while accommodations should be made in dues if required, yet such changes should be made if possible without any break in the constructive alignment of the Society.

In connection with the discussion on expenses of the Society, and salaries paid, I would like to present this data which was prepared for our Committee.

Annual Dues of Other State Medical Societies

Wisconsin, annual dues, \$12.00—reduced from \$15.00.

Minnesota, annual dues \$15.00—practically no delinquents.

Iowa, California, New York, Massachusetts, Michigan, Nevada, New Jersey, West Virginia, and several others \$10.00.

Missouri, Texas, and a number of smaller societies have annual dues of \$8.00.

Oregon, annual dues \$20.00, with very few delinquents.

Comparative Data from Other Societies

Michigan—Secretary, salary \$4,000; Editor, \$2,500—each office has adequate assistants. One hundred seventy-six delinquent members. Annual dues 1932 \$10.00.

Minnesota—With annual dues of \$15.00, approximately 100 delinquent members. No data available as to number of assistants and their salaries, etc.

Pennsylvania—Secretary, salary \$4,800; has two assistants, receiving \$2,400 and \$1,260 respectively. Editor, salary \$4,500—has two assistants receiving \$1,500 and \$1,200 respectively.

Texas—Secretary receives \$7,425, acts also as Editor. Assistant Editor, \$3,960. Public Relations Secretary \$2,808. Clerical assistants in office receive \$7,152.

Indiana—Secretary receives \$7,000, acts as Managing Editor. Secretary has two office assistants, receiving \$2,860. Editor, and one assistant receive \$2,680.

New York—Secretary receives \$3,550. One executive receives \$8,500 acting as Field Secretary. Salaries of assistants \$14,287.12. Chief Editor \$500. Executive Editor \$4,750. Literary Editor \$1,200. Other assistants \$4,640.25.

Missouri—Secretary, salary \$3,200. Assistant Secretary \$3,800. One bookkeeper \$1,200. One assistant \$1,200. Clerk \$600. Approximately 800 delinquent, December 31, for 1932.

New Jersey—Secretary receives \$1,500. Field Secretary \$4,000. Editor \$10,000. Editor and Secretary each have one assistant. Very few delinquent members, with dues at \$10.00 per annum.

Wisconsin—Secretary, salary \$7,200, also acts as Managing Editor. Secretary has three assistants, at \$1,890, two at \$1,530 each. Editor's salary \$2,400 with necessary assistants. With dues at \$12.00, reduced from \$15.00, 188 delinquents for 1932.

From reports received to date, from a number of societies, it is shown conclusively that societies with higher annual dues, show the relative percentage of delinquency for last year less than societies with lower dues. There are only a few of the larger societies whose activities compare favorably with those of the Illinois State Medical Society, and in each of them, salaries paid to officers and assistants are considerably more than this Society has paid, and their annual dues are generally higher than ours.

It does not seem to the Committee that men who have not paid any of their dues would be likely to pay five dollars any more than they will pay seven dollars. It seems to me that the Secretary and the Council of this Society can manage this matter better than the House of Delegates.

Dr. I. F. Harter, Stronghurst: The suggestions made by Dr. Hall and Dr. Skaggs apply to our little county. I think this matter should be well considered.

Dr. E. S. Hamilton, Kankakee: I rise to refute one statement which has been made here based on audits. For the year ending in 1932

the total expense of this Society was \$77,863.73, while for the year ending in 1933 the total expenses were \$66,890.66. There is a diminution in expense of over \$10,000 based on audits. I think that is conclusive proof that we have cut down our expenses.

Dr. C. C. Rentfro, Chicago: I would like to speak on Dr. Hall's motion. If we keep our dues up we are going to be in the same position as all financial institutions of the country that have kept their prices up and their dues up and their expenses up in the face of falling prices. It seems to some of us, and I may frankly say that I am not worried about my dinner tomorrow or the next day but I have some friends who are younger to whom money is not quite easy,—that these dues are too high. They are staying up above the level. The last straw is on and we cannot carry it. We might as well drop out. If the dues were cut down we might try. It is much better to have a large membership than a small exclusive one. A large membership is not so easy to handle, but it is a protection against things from without. If we can raise our membership by lowering the dues we should try to do so.

The President: The Chair calls attention to the fact that the dues were lowered by one dollar two years ago. Our own county society did not reduce its dues.

Dr. C. C. Rentfro, Chicago: Corn is only thirty-seven cents a bushel and some men have to depend on corn for an income.

Dr. Elizabeth R. Miner, Macomb: Our county stands well with the state. It is only because we had a surplus in the treasury and we paid the dues of members out of the surplus. If it had not been so at least half of our members would have dropped out. I am in favor of reducing the dues.

Dr. E. H. Ochsner, Chicago: There is an old Jewish proverb which says, "in time of prosperity prepare for adversity." That is just what the Illinois State Medical Society has done. In times of prosperity it did prepare for adversity and it laid up some money. There are a good many men in the state of Illinois that are doctors that have to go into their reserve these days to make both ends meet. Now is the time for the Illinois State Medical Society to apply some of the funds it has saved in days of prosperity. If it does that it reduces

the surplus possibly \$10,000. If it can keep in its ranks some of the men who are unable to remain in because of the dues, it will do more good than to keep it in the bank. I do not think the Illinois State Medical Society can reduce its expenses one dollar. I agree with Dr. Whalen. I think now is the time to spend money to educate the people. There are a lot of men in the medical profession wondering whether it is worth while to stay in the medical profession, wondering whether it is not better to become an irregular. I am unequivocally opposed to the substitute motion. Five dollars for the average man in the country is all he can afford to pay. Keep him in our ranks; spend our reserve! Our economists all tell us in time of prosperity save a little money so when adversity comes we can spend that. I am unequivocally opposed to the substitute motion. I think the motion of Dr. Hall should prevail, we should reduce our dues to five dollars.

Dr. Cleaves Bennett, Champaign: I am one of the corn growers that Dr. Rentfro spoke about. I have 300 acres down there. I think we are much obliged for the sympathy, but I believe the Secretary's books will show that the corn counties pay just the same as the others do. I am the one who three or four years ago started the motion in the Council to reduce the state dues from eight to seven dollars. I am perfectly willing to admit we studied this carefully. We tried to save some money. We tried to lay up a surplus. We did not know this thing was coming. We tried to lay up a surplus for the unknown menace that was coming. The thing that brought it up was the fact that the Illinois State Medical Society was going to spend some money in a big chunk on a history of the Illinois State Medical Society. The first thing that came up was taking care of the radio broadcast. I had an ambition and I told some of the boys that I hoped the day was coming when we could run this Society successfully on five dollars. That meant that every man would dig down and pay his dues. We cannot do it otherwise. They put the dues down from eight to seven dollars. The next year when we thought we had a little surplus we considered reducing it from seven to six dollars. Investigations that had been made through these other state societies and county societies in the United States showed that many of them were

paying higher dues than we were. There is one psychological proposition that no one brought up, that there are a lot of fellows in all classes of societies that will pay a big bill but if it is three, four or five dollars will say, "Oh, that is a little bill, I can pay that any time," and they do not pay it at all. You all know that bills of \$20.00 will be paid when bills of five dollars will not. If I had all the five dollars owing me I would not care what your dues were. If I had all the two dollars owing me I would not care about the price of corn or whether it rained or not. It is a fact which the Secretary has information about, that men in societies where their dues are ten, twelve or fifteen dollars are better paid up than in this one where the dues are seven dollars.

The other thing gentlemen, the State Society out of its treasury pays the salaries of our legal adviser, Dr. Ballinger and Dr. Neal, and all those people. That comes out of the whole group and that is all right. Some of these legal cases we have to fight clear through to the Supreme Court. The same thing about the corporation bill in Chicago, which will ruin the Chicago men if they do not fight it. It is going to take time and money to fight that through. I honestly believe that there are men in a sad plight. I have corn to sell, so have my tenants and my patients. Every dime I have in the world is in a farm and that is all right. I am glad it is. I want to tell you that three-fourths of the men in this room smoke. Would it not be a good idea to cut down your smoking and save a dollar there. The point is, the reserve which we have has been saved for trouble that is coming to us. I say there is plenty of trouble coming to us in the next three or four years. We have to fight for the defense of the individual practitioner in the state of Illinois.

I am in favor of the substitute motion. I think we should leave the dues at seven dollars and cut down the expense of your local county societies. We pay twelve dollars in Champaign County; we used to pay fifteen dollars. We cut our local dues from eight to five dollars and we can go for some time if we have to.

Dr. P. R. Blodgett, Chicago Heights: I think we should all recognize the fact that we need members in the Illinois State Medical Society more than we do money. It is all important that we keep the ranks of organized medicine

full. I feel that a reduction of dues from seven to five dollars is going to help to keep those ranks full. According to the Treasurer's report we have \$109,000. That is a good surplus. This change from seven to five dollars will not go into effect until next year. Next year is the off year for the legislature so that expense will not have to be met. I am not content that we should continue to blindly build up a surplus for something that no one knows is going to happen. I have faith in the Illinois State Medical Society to meet our obligations. I know in Cook County a reduction in dues will help materially to keep men in the Society.

Dr. John S. Nagel, Chicago: If every delegate in the room were to speak for ten or fifteen minutes he would not change the vote. Let us proceed to vote. I call for the previous question.

The President: We shall have Councilor Weld talk and then we shall proceed with Dr. Nagel's suggestion that there be no further discussion.

(Dr. Weld, one of the Councilors, started to read from Mr. Setterdahl's report, and made several comparative statements as to the expenses of the Society. President Neal called Dr. Weld's attention to the fact that the Council was solely responsible for the disbursement of all funds, and in that he was a member of the Council, President Neal suggested that the matter be referred to the Council for further consideration. Dr. Weld acceded to this suggestion from the Chair.)

The question before the House is on the substitute motion of Dr. Davis, which is that the dues of the Society remain at seven dollars. Are you ready for the question?

The Chair will ask that those in favor raise their hand and keep it raised until the Secretary can count them, then the negative side will have an equal opportunity to vote. If that is not demonstrable enough to the Chair we will pass the ballots.

(The count was made, 39 in favor and 36 against.)

The Secretary: I think we had better have a ballot.

The President: It is very important that we get a correct count. I am going to ask that all in favor of the dues remaining at seven dollars please rise. (43 in favor.) All opposed please

rise. (38 against.) The amendment is carried. The substitute motion prevails. The dues remain at seven dollars.

The President: The next order of business is the report of the Resolutions Committee.

1. *Physicians on staffs of hospitals approved for intern training should be limited to members in good standing of the American Medical Association.* (See page 12.)

Dr. C. B. Reed, Chicago: The Committee recommends the adoption of this resolution.

Dr. A. A. Hayden, Chicago: I move the adoption of the Committee's report on this resolution. (Motion seconded by Dr. J. R. Ballinger, Chicago, and carried.)

2. *Creation of a Committee of fellows to make a scientific analysis of the available data pertaining to the rendering of medical service as defined by the Committee on the Costs of Medical Care.*

WHEREAS, the report of the Committee on the Costs of Medical Care and the recommendations of its majority seem to have been written by sociologists and to have been based upon studies directed to confirm theories expressed in a book written by its Director of Study and published before the Committee was organized.

AND WHEREAS, the first minority report, deserving as it is of the support of the medical profession, seems to be essentially a criticism of the report and recommendations of the majority and not a scientific analysis of the available data.

AND WHEREAS, the other minority reports and individual statements seem to be statements of differences with the majority and first minority reports.

Be it resolved, that the House of Delegates of the Illinois State Medical Society propose to the House of Delegates of the American Medical Association that there be created a committee of Fellows, whose average age shall be under fifty years and who shall be representative of all types and special fields of practice including dentistry, to make a scientific analysis of all available data pertaining to the rendering of "medico service" as defined by the Committee on the Costs of Medical Care.

And be it further resolved, that this study be undertaken with the hope that methods of rendering medical service may be devised to improve the quality of medical service, lessen the

financial burden of illness, and best satisfy the peculiar needs of the various rural, urban and metropolitan communities of the United States.

Dr. C. B. Reed, Chicago: The Committee disapproves of the resolution on the ground that it is a duplication of recent work which was and is unsatisfactory, that it is expensive in operation and probably futile in results.

Dr. J. S. Nagel, Chicago: I move that the recommendation of the Resolutions Committee be approved. (Motion seconded by Dr. S. E. Munson, Springfield, and carried.)

Interne service in general hospitals chartered by the state. (See page 12.)

Dr. C. B. Reed, Chicago: The first result of this resolution would be to permit class B schools to put their graduates in class A hospitals. The House of Delegates has no power or authority to interfere in this matter. It in reality concerns only the State of Illinois, the American College of Surgeons and the American Medical Association. The entrance of the House of Delegates upon this field is unwarranted and impertinent. The Committee recommends that this resolution be referred to the State Council for further consideration.

Dr. A. A. Hayden, Chicago: I move the adoption of the report of the Committee. (Seconded by Dr. G. W. Post, Chicago, and carried.)

4. *Arrangement of Program for Annual Meeting.* (See page 13.)

Dr. C. B. Reed, Chicago: This resolution is approved in principle but the Committee recommends, since it concerns an executive matter, that it should be referred to the Council of the Society.

Dr. A. A. Hayden, Chicago: I move the adoption of the Committee's report. (Seconded by Dr. Philip H. Krenscher, Chicago, and carried.)

5. *Fees for surgical service rendered at state institutions.* (See page 13.)

Dr. C. B. Reed, Chicago: The Committee has approved this resolution and recommends its adoption. I, therefore, move the adoption of this report. (Seconded by Dr. Andy Hall, Mt. Vernon, and carried.)

6. *Advertising by pharmaceutical houses in secular magazines and over the radio.*

WHEREAS, we find a tendency on the part of some pharmaceutical houses to advertise direct

to the laity by use of the radio, and secular magazines, preparations which originally were used exclusively and popularized by physicians; and whereby, such methods of advertising are unethical and antagonistic to the medical profession;

Be it resolved, that we go on record as opposed to this form of advertising.

Dr. C. B. Reed, Chicago: The Committee approves the resolution but the American Medical Association has gone on record as advising advertising to the laity of foods and antiseptics, such as Sharpe and Dohme, Horlick, etc.; I do not see that we can do anything about it since the American Medical Association is the Supreme Court in this matter. I move the adoption of this resolution. (Motion seconded by Dr. A. A. Hayden, Chicago, and carried.)

7. *Consideration of mental disease by the general profession.*

WHEREAS, the demand of the public for efficiency, experience and wisdom in the field of mental disease requires that the profession should spend more time in consideration of these problems and in the development of a wider and deeper interest,

Therefore be it resolved, by the Illinois State Medical Society that the county units should devote at least one meeting a year to the subject of psychiatry, and

Be it further resolved, that the members of the medical profession should, if possible, meet at least once a year in the State Hospital of their district.

Dr. C. B. Reed, Chicago: The Committee approves this resolution and recommends its adoption. I, therefore, so move. (Motion seconded by Dr. S. E. Munson, Springfield, and carried.)

8. *Time and place of caucuses at the annual meeting.*

Resolved, that hereafter the delegates to the Illinois State Medical Society shall meet immediately after the first meeting of the House of Delegates to the Illinois State Medical Society to decide when and where they shall have a caucus. It being understood that the Delegates of Chicago and downstate shall meet separately to perfect and form such a caucus.

Dr. C. B. Reed, Chicago: The matter of caucuses is no legitimate part of the proceedings of this House of Delegates and, therefore,

your Committee moves that this resolution and all previous action relating to caucuses or the time for holding the same be erased from the minutes. (Motion seconded by Dr. A. A. Hayden, Chicago, and carried.)

9. *Commendation of President on Economy Bill.*

In compliance with the pertinent clause in the Secretary's report it is hereby

Resolved, that the Illinois State Medical Society in annual session at Peoria does hereby commend the President upon his Economy bill as recently passed by Congress wherein the expansion program outlined in 1929 for veteran administration is checked and especially that part which concerns the increase in veteran hospitals, and

Be it resolved, that a copy of this resolution be sent to the President and that it be spread upon the minutes of the Society.

Dr. C. B. Reed, Chicago: I move the adoption of the resolution. (Motion seconded by Dr. C. S. Nelson, Springfield.)

Dr. C. C. Rentfro, Chicago: Will Dr. Reed strike out the word "veteran" in this resolution? I am a veteran and we do not say that the doctors are against the veterans. I try to talk to them about economy.

Dr. A. A. Hayden, Chicago: I believe the point brought out by the last speaker is a good one. I move to amend the report by Dr. Reed to strike out the word "veteran."

Dr. R. L. Walgren, Caledonia: I do not see any reason to mix into this. The less we say the better.

Dr. P. R. Blodgett, Chicago Heights: In this economy program there are a great many injustices that the Illinois State Medical Society must close its eyes to. I move that the resolution be tabled. (Motion seconded by Dr. R. L. Walgren, Caledonia, and Dr. Andy Hall, Mt. Vernon.)

Dr. F. P. Hammond, Chicago: I arise to a point of order. The amendment was to strike out the word "veteran."

The President: A motion to table is always in order. I call for the vote. (Motion to table resolution carried.)

10. *Candidates for office in the American Medical Association should be actively employed in private practice.*

Resolved, that the State Medical officers be

requested to use every effort to oppose all candidates for office in the American Medical Association who are not now or have not been actively employed in private practice and that they oppose all legislation that tends to socialize medicine.

Dr. C. B. Reed, Chicago: The Committee does not feel that this will get us anywhere but the Committee approves the resolution and I move its adoption. (Motion seconded by Dr. I. F. Harter, Stronghurst, and carried.)

11. *Protest against the treatment of Jewish doctors in Germany.*

Be it resolved, by the Douglas Park Branch of the Chicago Medical Society: That this body of American physicians indignantly protests against the injustice visited upon members of the medical profession in Germany, who, because of their race or faith or descent, have been thrust out of their positions in dispensaries, hospitals and universities, and have been in addition greatly hampered in their private practice. Among them are many whose contributions to medical science and art have been invaluable and have brought great credit to Germany; but our protest is not because of the wrong done to the eminent only, it is for the humblest as well. The honor of our profession has been attacked, and we look to our colleagues in Germany irrespective of birth or descent, to vindicate that honor by bringing about the abolition of a discrimination so repugnant to the spirit of science and of humanity.

Be it further resolved, that these resolutions be forwarded to the House of Delegates of the Illinois State Medical Society, and from this body to the Board of Trustees of the American Medical Association with their recommendation for adoption.

Be it also further resolved, that a copy of these resolutions or others, when finally adopted by the American Medical Association, be sent to President Roosevelt, Secretary of State Hull, and to Senators James Hamilton Lewis and William H. Dietrich, Senators from the State of Illinois, with the request that they be spread upon the Congressional Record.

Dr. C. B. Reed, Chicago: The Committee approves this resolution and recommends its adoption.

Dr. Mather Pfeifferberger, Alton: One member of the Committee did not see this resolu-

tion. I move it be tabled. (Motion seconded by Dr. J. H. Harry, Chicago.)

Dr. Maurice Kaplan, Chicago: I rise to the right of personal privilege. A resolution similar to this was passed by the Pennsylvania State Society. It was introduced on the grounds that it was a humanitarian act. It was thought that the members of the House of Delegates would act accordingly.

The President: The motion has been made and seconded to table the resolution. A motion to table is not debatable. (Motion to table resolution carried.)

12. *Restriction of amount of clinical material used by medical schools to amount needed for teaching and research.*

(See page 12.)

Dr. C. B. Reed, Chicago: The Committee has not had time to study up this resolution.

Dr. A. A. Hayden, Chicago: I move the adoption of this resolution. (Motion seconded by Dr. Lee Frech, Decatur.)

Dr. G. Henry Mundt, Chicago: The other day I introduced this resolution and I thought that it was handed in in acceptable form to the Committee. I am very anxious to have this passed because I think if the House of Delegates of this organization requests the House of Delegates of the American Medical Association to request the Council on Medical Education and Hospitals to do this thing there will be a moral obligation to bring it before the Council and have a report on it. We need some assistance along this line. There was a period when our discussion about the practice of medicine by medical schools was not supported in other parts of the country. That thing is going on in leaps and bounds and the men are beginning to understand what it means. I am very anxious to see this resolution passed.

Dr. P. R. Blodgett, Chicago Heights: I believe we all stand on the premise that corporations should not practice medicine. That is being done. I can see no difference whether it be the Public Health Institute or a lay directed medical school. I believe it is time for this House of Delegates to put itself on record against this practice. (Motion to adopt resolution carried.)

13. *Resolution of appreciation to the city of Peoria.*

WHEREAS, the Illinois State Medical Society at the 83rd annual meeting held in the city of Peoria, May 16 to 18, 1933, even though in the midst of economic stress, has held one of the best arranged and best attended meetings of all times, and

WHEREAS, much credit for this successful meeting is due the Peoria Medical Society, the Committee on Arrangements, and its most capable chairman, C. G. Farnum, as well as the Association of Commerce, the Pere Marquette Hotel, and many others in Peoria who have added to the success of the meeting.

Therefore be it resolved, that the Illinois State Medical Society, through the House of Delegates now assembled instruct the Secretary to send a letter thanking the Mayor, Police Department, Association of Commerce, and especially the Convention Secretary, M. J. Finn, who has been constantly at the headquarters throughout the meeting, and whose foresight and careful management over a period of months has been of such great value to those making all necessary arrangements, the Pere Marquette, and the other Peoria Hotels, the Peoria Medical Society, the Committee on Arrangements and the chairman, C. G. Farnum for his constant efforts over a period of months, the Ladies' Entertainment Committee, the ministers and all others who have had a part in making this one of the outstanding meetings of all times.

Be it further resolved, that a special vote of thanks be given to the Press of Peoria for their assistance and method of seeking information from the officers and committees of this Society, and their remarkable cooperation in giving accurate and acceptable reports of the meeting.

Dr. C. B. Reed, Chicago: I move the adoption of this resolution. (Motion seconded by Dr. Mather Pfeifferberger, Alton, and carried.)

14. *Amendment to Article 5 of the Constitution.*

Resolved, that the word *thirty* in the eleventh line of Article 5 of the Constitution and By-Laws be changed to the word *fifty* and that the word *ten* in the twelfth line of the same section be changed to *twenty*, making the last sentence of Section 5 of the Constitution and By-Laws to read as follows:

Fifty delegates representing not less than

twenty counties shall constitute a quorum for the transaction of business.

Dr. A. A. Hayden, Chicago: I move this be referred to the Council.

The Secretary: This was introduced as a resolution by Dr. Kittler last year and automatically laid over for action this year. It merely changes the By-Laws making 50 delegates from 20 counties a quorum instead of 30 delegates from 10 counties. I think some action should be taken.

Dr. J. S. Nagel, Chicago: Inasmuch as this conforms to the change in the By-Laws, I move its adoption. (Motions seconded and carried.)

Dr. C. B. Reed, Chicago: That finishes the work of the Committee on Resolutions and the members respectfully ask for their discharge.

Dr. G. Henry Mundt, Chicago: I move the adoption of the report of the Resolutions Committee as a whole. (Motion seconded by Dr. Lonis Brannon, Joliet, and carried.)

The President: One of our delegates, C. H. Ives of Dixon, died on the first day of the meeting. Unless otherwise handled, the Chair will ask the Secretary to send a letter to the bereaved family.

Dr. W. E. Kittler, Rochelle: I would like to include in the resolution the Lee County Medical Society.

The President: The next order of business is the selection of a meeting place for next year. We merely ask for a preference because this meeting has become such a problem that the selection is left to the Council, so that through its officers it may check-up on the facilities.

Dr. G. C. Otrich, Belleville: I offer the suggestion that we go to Springfield.

Dr. S. E. Munson, Springfield: On the off legislature year we cordially invite and welcome you to come to Springfield.

Dr. Mather Pfeiffenberger, Alton: I move that we accept Springfield's as the preference. (Motion seconded by Dr. C. S. Nelson, Springfield, and carried.)

Dr. Andy Hall, Mt. Vernon: The Committee on Resolutions ruled that the House of Delegates has nothing to do with the time we should have caucuses. It seems that the Secretary and President set the time for the caucuses. I would like to know whether next year we will have it on the first or second day. I, therefore, make

a motion that no caucus be held previous to the second day of the meeting.

The President: The Chair must rule the motion out of order because it has nothing to do with the official program. Caucuses are merely gentlemen's agreements downstate and upstate, so we can expedite the business of Thursday morning. The Chair feels that the House of Delegates should not make a motion as to when caucuses shall be held. However, if any one wishes to differ from the Chair he is privileged to do so.

Dr. G. H. Evans, Chicago: I move that we sustain the ruling of the Chair. (Motion seconded by Dr. Mather Pfeiffenberger, Alton, and carried.)

Dr. J. S. Lundholm, Rockford: Caucuses are gentlemen's agreements. I move that we act as such and that we make a gentlemanly agreement today that we have no caucus until the second day of the meeting next year.

Dr. J. S. Nagel, Chicago: I rise to a point of order. This House of Delegates goes out of existence within the next half hour. We cannot rule what the next delegates will do.

Dr. Andy Hall, Mt. Vernon: It is true that this House of Delegates will go out of existence today but I have been seeing some of these faces here for the last thirty years and maybe will for the next thirty years. I think we should have a gentlemanly agreement that we have no caucus earlier than the second day.

Dr. R. L. Green, Peoria: I move we adjourn. (Motion seconded and carried.)

The House of Delegates adjourned *sine die* at 10:35 A.M.

ANNUAL SESSION OF AMERICAN CONGRESS OF PHYSICAL THERAPY

The American Congress of Physical Therapy announces its twelfth annual scientific and clinical session which will be held September 11 to 15, 1933, at the Palmer House, Chicago.

Each year these annual gatherings have increased in popularity. This is due to the splendid programs which are offered. This year efforts have been doubled to present a program which will appeal to every physician and technician engaged in the application of physical measures. Clinics and addresses deal with a variety of subjects, from the very fundamental to the more advanced. A large number of research reports will be made by prominent leaders in the field.

Physicians are urged to plan their vacations for this September session. The Century of Progress Exposition and this twelfth annual meeting of the Congress

will make a week's stay in Chicago profitable and interesting.

As an unusually large attendance is anticipated those who plan to attend should make their hotel reservations as early as possible. Preliminary programs will be mailed on request. Write to the Executive Secretary, American Congress of Physical Therapy, 30 North Michigan Avenue, Chicago.

PUBLIC HEALTH LECTURES

On Tuesday afternoon, from two to four o'clock, during July and August, 1933, the Chicago Woman's Club, assisted by the Illinois Federation of Women's Clubs, the Illinois State Medical Society and the Children's Civic Theatre, will present a health lecture, preceded by an artistic program and followed by a round table discussion. These programs will be given at the Navy Pier and should be of interest to everybody. Physicians are asked to tell their patients of these meetings. Speakers scheduled are as follows:

July 11—Doctor Alice Conklin—"Health Audits." Illinois Federation of Women's Clubs Chorus.

July 18—Doctor Julia Strawn—"Safe Surgery." Illinois Federation of Women's Clubs Chorus.

July 25—Doctor Bertha VanHoosen—"A Century of Progress of Health." Children's Civic Theatre.

August 1—Doctor Effa V. Davis—"What the Community Should Know About Child Bed Fever." Illinois Federation of Women's Clubs Chorus.

August 8—Doctor Josephine Young—"Child Psychology." Illinois Federation of Women's Clubs Chorus.

August 15—Doctor Anna Blount. Children's Civic Theatre.

August 22—Doctor Lena K. Sadler—"Adolescence." Illinois Federation of Women's Clubs Chorus

August 29—Doctor Alice Hall—"Focal Infections." Children's Civic Theatre.

EDUCATIONAL COMMITTEE ILLINOIS STATE MEDICAL SOCIETY

April—May, 1933

SPEAKERS' BUREAU

115—Physicians addressed lay audiences with an attendance of 21,000.

22—Parent Teacher Associations and Mothers Study Clubs

43—College, Junior College, High School assemblies

4—Churches

22—Women's Clubs

18—Men's Clubs

3—Nurses Associations

3—Public Meetings

Following a series of five lectures arranged for the Morton Junior College, a letter of appreciation came from the President of the student group:

"We wish to thank you for the splendid series of lectures you have arranged for us during the past term of our school year. They have been most enthusiastically received, and we hope that you and the men who have so kindly taken the time from their strenuous duties will feel the same way. These lectures have been real events

and high lights in our educational activities and we hope we may have more of them next year.

"The Illinois State Medical Society has indeed revealed to us a remarkable attainment of skill, education and *high ideals*."

Councilors and officers of county medical societies can be of service to the Committee by giving publicity to the Speakers' Bureau and clubs can be assured of satisfactory speakers.

SCIENTIFIC SERVICE COMMITTEE

39—Speakers presented scientific papers before the following societies:

- 2—Whiteside County Medical Society
- 1—Kankakee County Medical Society
- 1—Vermilion County Medical Society
- 8—Will-Grundy County Medical Society
- 2—Perry County Medical Society
- 2—Clinton County, Iowa
- 2—Bureau County Medical Society
- 5—LaSalle County Medical Society
- 2—Union County Medical Society
- 1—Jackson County Medical Society
- 1—Mercer County Medical Society
- 1—Macon County Medical Society
- 2—Monroe County Medical Society
- 2—Fulton County Medical Society
- 1—Knox County Medical Society
- 2—Henry County Medical Society
- 2—Ford County Medical Society
- 1—Davenport, Iowa
- 1—Central Illinois District Medical Association

Subjects presented at the above meetings:

- 3—Radiology
- 1—William Beaumont
- 1—Urology
- 2—Allergy
- 1—Internal Medicine
- 1—Orthopedics
- 2—Endocrinology
- 2—Proctology
- 2—Gastro-Enterology
- 1—Plastic Surgery
- 1—Dental
- 3—Public Health
- 5—Heart
- 1—Dermatology
- 3—Obstetrics
- 1—Goiter
- 1—Pediatrics
- 1—Eye
- 1—Clinic for Handicapped
- 1—Medical Economics
- 1—Arthritis
- 3—Paresis
- 1—Varicose Veins

The list of speakers and subjects for medical meetings is gradually increasing and little difficulty is experienced in arranging scientific programs for any section of the state.

PRESS SERVICE

1,996—Releases to Illinois newspapers
 761—Regular press service
 44—Monthly service to 22 newspapers
 67—Newspapers, re meetings of Sections of Illinois State Medical Society
 578—Newspapers, re annual meeting of State Society
 128—Newspapers, re certified milk and reduced price
 173—Newspapers, re three meetings LaSalle County
 38—Newspapers, Perry County Medical Society meeting
 3—Chamber of Commerce, Chicago Medical Society
 71—McLean County Medical Society public meeting
 39—Annual meeting, Henry County Medical Society
 51—Bureau County Medical Society meeting
 33—Articles on Colds, Home Bureau Advisers
 22—Health Educational articles were written and approved:

Rest
 Immunization not an Experiment
 Diabetes in Children
 The Child Who Will Not Eat
 Traveling with the Baby in Summer
 Chronic Backache
 Minimizing the Chances of Diabetes
 Getting the Child to Eat
 Heart Weakness and Its Prevention
 Nervousness
 Body Poise and Health
 Summer Time and the Baby
 The Case of the Handicapped
 Disorders of the Tongue
 Preparation for School
 Swimming and the Sinuses
 Acute Bone Infections in Children
 Your Feet in Summer
 Feelings of Inferiority
 Early Diagnosis of Cancer
 Boils and Carbuncles
 Safeguarding the Baby in Hot Weather

The office of the Committee is equipped to furnish a health column and news releases to every newspaper in Illinois.

RADIO

34—Radio talks were given from Chicago stations.

Radio station WJJD has changed management and the Young Mothers' Hour has been discontinued for the present. However, we are broadcasting every Tuesday morning at about 9:40 o'clock, a series of talks of special interest to mothers—station WAAF.

Committee is supplying approved radio talks to LaSalle County Medical Society for use from station WJBC, LaSalle.

Three radio talks were given in Peoria during Annual meeting of Illinois State Medical Society.

CLINICS FOR HANDICAPPED CHILDREN

Jackson County Medical Society is sponsoring a clinic on June 22 at St. Andrews Hospital, Murphysboro. Doctor Kreuscher will hold the clinic.

Whiteside County Medical Society will sponsor a clinic the last week in June at Sterling, Illinois.

MISCELLANEOUS

Educational Committee secured an exhibit from the American Medical Association for use at the Annual Meeting of the Illinois Congress of Parents and Teachers, Danville.

Committee contributed \$25.00 to the exhibit on Maternal Hygiene sponsored by the Medical and Dental women at the Century of Progress.

Committee is planning to make use of pamphlets on animal experimentation prepared by Doctor A. C. Ivy, for distribution to lay groups.

Moving picture films secured.

Package libraries loaned to physicians.

Special publicity given to HEALTH WEEK.

Prepared exhibit for Annual Meeting.

Dr. Reed's article on medical advertising sent to delegates from Illinois to American Medical Association meeting.

SPECIAL SERVICE TO MEDICAL SOCIETIES

700—Notices mimeographed and mailed for LaSalle County.

213—Notices prepared and mimeographed for Bureau County.

211—Announcements sent out for Franklin County.

177—Announcements prepared for Henry County Annual Meeting.

185—Notices mimeographed and mailed for Perry County.

368—Cards mimeographed and mailed to women physicians of Cook County (announcing annual meeting of Illinois State Medical Society).

227—Cards mimeographed for Medical Dental and Allied Science Association concerning Century of Progress medical exhibit.

675—Notices and cards (335) mimeographed for Woman's Auxiliary of the Chicago Medical Society.

56—Letters mimeographed and mailed for the Medical Economics Committee. Information assembled for the report of this Committee.

128—Announcements sent out concerning value and price of Certified and Vitamin D Milk.

Respectfully submitted,

JEAN McARTHUR,

Secretary

AUXILIARY NOTES

A CHARGE TO NEW OFFICERS

Mrs. Solomon Jones

President Woman's Auxiliary, Illinois State Medical Society

May 17, 1933

In accepting this high honor to which you have elected me, I am not unmindful of the confidence imposed or of the relative responsibility. I believe whole heartedly in the Woman's Auxiliary to the Medical Association and I will tell you why.

In the first place, we have been organized long enough now to have our place in the sun. Through the wise leadership of our National Auxiliary and through the intelligent interpretation of the prescribed plans and policies as laid down for us by the Advisory Council of the American Medical Association and its constituent

branches, our state leaders have worked out a program that is adaptable to any county auxiliary unit.

Each of our own state presidents has strengthened the link in the chain that unites us in common purpose. To Mrs. Mueller, our president, it seemed the opportune time to gather the fragments of our records, scrap by scrap, and file them in permanent form which will grow more precious as we continue to record our history. As important as all this is, the part that individuals will play is most vital.

Personally I have supreme confidence in the physician's wife, wherever she is. She is a woman bountifully endowed with common sense. She is, usually, by virtue of her unique position, a leader in the community. She is a member of such affiliated National agencies as the Federation of Women's Clubs, the Congress of Parents and Teachers, and the Auxiliary to the American Legion. Because of this experience her judgment can be relied upon. Once she becomes familiar with the purpose and plans of our auxiliary work she will be quick to lead her husband to a sympathetic understanding and together they will take their rightful place as leaders in all community health activities giving the right interpretation, in the interest of scientific medicine.

May I repeat to you a part of a charming address given in response to the address of welcome at the New Orleans convention last May. This was the keynote sentiment of our convention and struck a responsive chord in the hearts of the listeners. This is what Mrs. R. W. Tomlinson of Delaware said:

"One great bond we have in common, one ideal that we hold highest and best among our earthly ones—the bond, that of participating in the practice of the noblest of professions; the ideal, that of using our service wisely in the interest of that profession and mankind, proving ourselves true helpmates, both individually and collectively. Collectively we are a strong force that may be of use, in a quiet way, to the medical profession.

"We, who know the unselfishness of these men of ours, can do much to enlighten a frequently misinformed public about the true character of medical work and its plans for public health and welfare. We can, in a non-aggressive way, offset much of the wicked propaganda that is constantly kept before an ignorant and deluded populace.

"With this in mind, let us use our time wisely, make our plans carefully and thank God for the opportunity to be of service to this profession of which we are an honored part."

To my Board I impose this trust:

To my county presidents and their boards, I impose this high purpose—this ideal—that together, as leaders, for the year that lies just ahead, we may keep faith with our members and those whom we desire to interest, and last but not of the least importance, prove worthy of the trust and confidence imposed in us by our own husbands—the doctors.

Peoria, Illinois, May 16, 1933

The height of illegibility—a doctor's prescription written with a postoffice pen in the rumble seat of a second-hand car.—Judge.

ANNUAL REPORT OF THE PRESIDENT OF THE WOMAN'S AUXILIARY TO THE ILLINOIS STATE MEDICAL SOCIETY

In order to place emphasis in the proper place I wish first to extend my deep appreciation to every member of my Board, to County Presidents, and to individual members all of whom have worked valiantly throughout the year.

I wish also to acknowledge our everlasting indebtedness to our Advisory Committee, Doctors Hutton, Ferguson, Chapman and Whalen,—to Miss Jean McArthur, to Dr. John R. Neal, and to Dr. C. J. Whalen, for his generosity in publishing Auxiliary news in the Illinois State Medical Journal. Without this splendid support nothing could have been accomplished.

The best heritage I can leave my successor is to bespeak for her the same loyal cooperation from each Auxiliary member which has been accorded me.

Needless to say I appreciate the honor of serving as President of the State Auxiliary. During this year I have occasionally reached the mountain top but as often have fallen into an abyss only to be rescued by some good samaritan. It has, in truth, been a happy, fruitful experience which I shall long cherish.

One of my disappointments has been my inability to visit every County Auxiliary but I did succeed in attending meetings of Will-Grundy County Auxiliary, our two new County Auxiliaries, Livingston and Marion,—and of course, my own Cook County Society, including three of its Branch organizations,—Aux Plaines, North Shore and North Side.

Responding to an appeal from Dr. Genevieve Chipman, President of Carroll County Medical Society, for assistance in forming an Auxiliary there Miss McArthur and I visited Savanna for this purpose but we succeeded only in effecting a temporary organization which has not developed into a permanent one.

Illinois now has twelve active County Auxiliaries not including one, Randolph County, which is in a state of suspended animation ready to resume work as soon as its Medical Society again holds meetings. Our paid State memberships number today slightly less than 500, an inaccurate figure due to our banking situation which in some districts is still acute.

Valuable assistance is now available in the Handbook published by the National Auxiliary which contains detailed information regarding duties of County and State Committees. This year the State purchased 42 copies of this Handbook which were distributed to members of the State Board and to all County Presidents with the request that these books be turned over to their successors at the close of their terms of office. May I recommend that every County Auxiliary officer secure a Handbook to guide her in her work. Copies may be secured from the Corresponding Secretary of the State Auxiliary at 40c each.

Midyear meetings of the State Board of Directors were held in Chicago on Nov. 18, 1932 and on March 18, 1933. Of the 29 Board Members, 21 answered roll call at the first meeting and 22 at the second with the result that much enthusiasm was exhibited and a corresponding volume of work was accomplished.

The goal of this administration has been to perfect the mechanics of the organization. Toward this end have been directed the 201 letters I have written as well as countless messages from your Corresponding Secretary, Mrs. Kreuscher, with the result that a detailed record file is being turned over to the incoming regime. This file contains all the data accumulated which you patient County officers have sent us throughout the year. Nevertheless the important feature of keeping this file up to date once more must be referred to the County organization. County Presidents and Secretaries should never fail to notify similar State officers of changes in Board personnel, of the results of elections and appointments of Chairmanships, and other important information necessary to a businesslike organization. Briefly the State Auxiliary this year has:

1. Published the By-laws in pamphlet form and distributed copies to each individual member.
2. Sent four programs to County societies.
3. Bought from the National Auxiliary and distributed to Counties 2000 membership record cards and 43 Hand-books.
4. Established a uniform County fiscal year which is March 1.
5. Arranged for representation at Annual Conventions of newly formed County Auxiliaries.
6. Adjusted payment of County dues so that in the future all County Auxiliaries will be following instructions of the National Auxiliary to pay dues at the end of the County fiscal year.
7. Adopted a suggested set of By-laws for new County Auxiliaries and for organization work.
8. Inaugurated a record card system for the use of State officers which I trust will be continued and developed from year to year.
9. Purchased a steel filing cabinet for Archives and other records and obtained permission to place it in the office of the Educational Committee of the Illinois State Medical Society.
10. Purchased a die for a State President's pin and presented pins to all four past Presidents as well as to the retiring President.

Once more may I say that our society is an Auxiliary of the Medical Society and as such our most important work is to become so well informed that we can at all times be intelligent representatives of the aims and purposes of organized medicine. This may be accomplished by holding Auxiliary meetings, by reading Medical Journals, and by conferring with our husbands and Advisory Committees. In this connection it is perhaps apropos to suggest that we should continue to be known as the wives of our physician husbands and not let it be said that we are attempting to supplant them by permitting them to be designated merely as Auxiliary husbands.

Submitted by

GRACE R. MUELLER (Mrs. E. W.)

1420 Elmdale Ave., Chicago.

WOMAN'S AUXILIARY
TO THE
ILLINOIS STATE MEDICAL SOCIETY
The Board of Directors
OFFICERS

President—Mrs. Solomon Jones, 604 Buchanan St., Danville, Ill.

President-Elect—Mrs. Lucius Cole, 1117 North Lathrop Ave., River Forest, Ill.

First Vice-President—Mrs. H. I. Conn, Newman, Ill.

Second Vice-President—Mrs. S. M. Goldberger, 2006 Humboldt Ave., Chicago.

Third Vice-President—Mrs. A. H. Baugher, 5214 Greenwood Ave., Chicago.

Corresponding Secretary—Mrs. E. B. Coolley, Wolford Hotel, Danville, Ill.

Recording Secretary—Mrs. John Adam Wolfer, 636 Wellington Ave., Chicago.

Treasurer—Mrs. F. P. Hammond, 6020 Drexel Ave., Chicago.

COUNCILORS

1st District—Mrs. D. J. Evans, 15 South View St., Aurora, Ill.

2nd District—Mrs. A. B. Middleton, 603 North Mill St., Pontiac, Ill.

3rd District—Mrs. N. M. Percy, 2130 Lincoln Park West, Chicago.

3rd District—Mrs. G. H. Mundt, 7000 South Shore Drive, Chicago.

3rd District—Mrs. A. H. Brumback, 1503 Jackson Blvd., Chicago.

4th District—Mrs. C. H. Anderson, East Moline, Ill. (State Hospital).

5th District—Mrs. H. B. Henkel, 2135 Wiggins Ave., Springfield, Ill.

6th District—

7th District—Mrs. John E. Black, 600 S. Maple St., Centralia, Ill.

8th District—Mrs. E. S. Allen, 120 S. Locust St., Arcola, Ill.

9th District—Mrs. E. W. Burroughs, 129 West College St., Harrisburg, Ill.

10th District—Mrs. I. L. Foulon, 608 Washington Place, East St. Louis, Ill.

11th District—Mrs. E. R. Steen, 308 Sterling Ave., Joliet, Ill.

CHAIRMEN OF STANDING COMMITTEES

Organization—Mrs. Philip H. Kreuscher, 5816 Blackstone Ave., Chicago.

Press & Publicity—Mrs. J. P. Simonds, 25 E. Walton Place, Chicago.

Legislative—Mrs. W. D. Chapman, Silvis, Ill.

Printing—Mrs. John R. Neal, 609 S. Walnut St., Springfield, Ill.

Convention—Mrs. H. B. Henkel, 2135 Wiggins Ave., Springfield, Ill.

Program—Mrs. E. P. Sloan, 1417 N. Main St., Bloomington, Ill.

Revisions—Mrs. E. W. Mueller, 1420 Elmdale Ave., Chicago.

Public Relations—Mrs. W. R. Cubbins, 425 Arlington Place, Chicago.

Credentials & Registration—Mrs. Imas Rice, 403 Oak Ave., Aurora, Ill.

Hygeia—Mrs. H. H. Hurd, St. Mary's Hospital, East St. Louis, Ill.

Finance—Mrs. W. R. Rhodes, Toledo, Ill.

Archives—Mrs. Michael L. Mason, 2258 Lincoln Park West, Chicago.

Hostess—Mrs. E. P. Sloan, 1417 N. Main St., Bloomington, Ill.

MIRACLES OF HEALING

ACHIEVED THROUGH EXPERIMENTS WITH ANIMALS

The Illinois Society for the Protection of Medical Research announces that seven of mankind's major victories in the war against disease have been won through experimenting with living animals.

Such experimentation, the society says, has enabled medical science to do these things:

Make operations painless through the use of anaesthesia and analgesia.

Produce serums for use against smallpox, diphtheria, lockjaw, scarlet fever, rabies, etc.

Develop antiseptic and aseptic materials and methods, preventing wound infections and blood poisoning.

Become acquainted with symptoms of many diseases.

Acquire knowledge on which is based the use of insulin for diabetes, thyroid extract for children of inferior physical and mental development and liver extract for the treatment of pernicious anaemia.

Prevent rickets, scurvy, polyneuritis, pellagra, etc., through control of nutrition.

Obliterate cholera, plague, yellow fever and childbirth fever through knowledge of germs.

Earnest men and women demanding laws to end vivisection should consider thoughtfully that list of medical achievements.

Their sympathetic love for dumb animals is admirable, but perhaps they carry it too far in trying to stop altogether a work that has done so much to make humanity stronger, freer and happier.

"WE" OR "THEY"

One man, in speaking of his lodge will always think of it in terms of "we". "Down at our lodge we do so and so! We are making such and such progress."

Another man will speak of his lodge in terms of "they." "Why don't they do this," and "If only they would do that."

"We" is inclusive and shows a real, live interest. "They" is exclusive, and ere long excludes the man who uses it.

"We" indicates that one belongs heart and soul. "They" signifies that one considers himself an outsider looking in.

Don't be a "They" man. Be a "We" man.

Even the little rivet which holds the steel girder in place can say, "We make this building."

The world moves forward because of "We" men and women.—Virginia Masonic Herald.

Correspondence

CARE OF MENTALLY SICK IN ILLINOIS

Chicago, Ill., June 28, 1933.

To the Editor:—Regarding Dr. Gaghan's exceptions to statements in an article which appeared in the May issue of the ILLINOIS MEDICAL JOURNAL, there was no thought of hanging any halos about anybody's head nor of throwing any Irish confetti about regarding the care of the mentally diseased in Illinois.

That Dr. Gaghan's work at Elgin was not wasted is evidenced by the fact that that institution is now regarded as one of the best institutions in the state and something of a model for institutions of this sort in any state. Obviously it must have been good under his management too. The indictment, if any, should cover the entire medical profession rather than any particular physician or lay individual because of our failure to take a more active interest in mental disorders both inside and outside of state hospitals. Certainly it could not be directed at managing officers of state institutions. It is my understanding that Illinois is not by any means at the head of the column when it comes to caring for its wards, and my information is to the effect that a politician at one time prohibited the holding of any clinics in the state hospitals. It must be obvious that that order was issued as a vote getting measure rather than out of any consideration for hospital inmates. The only object of the article in question was to awaken interest in the subject of mental disease. If it has done that, even though some men disagree with the ideas expressed, it will have served its purpose.

As I see it, the medical profession ignores both the head and the feet of the patient. There are now colleges devoted to teaching people to care for the feet. The Illinois College of Chiropody has a very well equipped plant and its quarters for clinical cases are quite as well equipped and as clean as clinical quarters in most medical schools. I am informed that the average income of a chiropodist is somewhat in excess of the income of the average doctor. That field is entirely lost to the medical profession simply because the medical profession entirely ignored it. The profession is now in grave danger of having the field of mental

disorders taken over by lay psychologists. In these days when the doctor's field is being constantly narrowed by inroads of various sorts, it seems the profession should be brought to realize the importance of giving serious consideration to this subject.

Let me repeat that there was nothing in the article in the May issue that was intended to create any halos, and I would be even more emphatic in my statement that it was not intended in any way to criticize the medical personnel of state institutions. They have worked under severe enough handicaps that they should be spared any criticism.

JAMES H. HUTTON, M. D.

A CORRECTION ON DR. MARSHALL W. FIELD'S ARTICLE "THE NEW ORGANO-THERAPY IN GYNECOLOGY."

Chicago, Ill., June 28, 1933.

To the Editor: On the article of Dr. Marshall W. Field that appeared in the June issue the statement was made that the beginning of the recent discoveries may be said to date from 1922, when Allen and Doisy first made use of a convenient, practical test to determine when a small laboratory animal is experiencing oestrus. They showed that a smear from a rat's vagina between oestrus periods or following castration consists chiefly of leukocytes, whereas during oestrus it consists of a large number of squamous epithelial cells. This discovery is wrongly attributed to the men mentioned above and ought to be corrected. The very important discovery was made and it was published by Dr. G. Papanicolaou and Stocard of Cornell University in the American Journal of Anatomy in the September number, the year 1917—Volume 22. Their studies were done on the guinea pig that possesses a dioestrous cycle. The authors concluded that during each cycle typically corresponding changes are occurring in the vagina. Each period of sexual activity lasts about twenty-four hours and is characterized by the presence of a definite vaginal fluid, which is not always sufficient to be detected on the vulva, but is easily observed on examination of the vagina. The composition of the vaginal fluid changes with the several stages occurring in the uterus and vagina.

(a) To begin with during what they call the

first stage, the fluid consists of an abundance of mucous secretion containing great numbers of desquamated vaginal epithelial cells.

(b) During the second stage the contents of the vagina become thick and cheese-like on account of the great accumulation of desquamated epithelial cells.

(c) During the third stage the leukocytes begin to migrate reaching the epithelium and dissolve the broken down dead cells (epithelial). The vaginal fluid becomes thinner. The congestion in the vagina and uterus gives rise to blood masses beneath the epithelium.

(d) The fourth stage is merely a continuation of results of the activities of the third. A slight bleeding gives a reddish aspect to the vaginal fluid. At this time the stage of regeneration begins, so that the lost epithelium becomes rapidly replaced, almost before it has ceased falling away.

DR. S. D. SOTER.

55 E. Washington St.

DERMATITIS REPENS

Chicago, Ill.

To the Editor:

In a recent issue of THE ILLINOIS MEDICAL JOURNAL I read about a doctor having found a vaccine that helps to cure Dermatitis Repens. I was astonished. I cure this trouble in one sitting, and use no vaccines, salves or chemicals of any kind.

I thought my method was common knowledge. A great many years ago, during my service as surgeon to the out-patient department of Rush Medical College, we had a multitude of Dermatitis Repens cases. I demonstrated to a succession of classes how to treat this trouble.

Also during my twelve years' service as surgeon to Cook County Hospital and later to other hospitals, we had a large number of advanced cases of this trouble, and I showed a regiment of internes what to do to cure them.

During the last dozen years or so the number of cases of Dermatitis Repens has rapidly decreased for reasons that I shall give presently.

The beginning of Dermatitis Repens is always a shallow infected puncture wound of the palm of the hand or palmar surface of the fingers. Occasionally of the plantar surface of the foot. It occurs always where the epidermis is

thick. Occasionally, by extension it reaches the sides and, rarely, the dorsum of the fingers or the dorsum of the hand or foot.

The pus from the infected puncture wells up, and free escape being difficult on account of the minute diameter of the puncture, the pus raises the epidermis around the puncture—this starts the trouble. The pus then insinuates itself between the epidermis and derma and so continues to spread the infection, raising the epidermis from the derma further and further, the raised epidermis becoming white and devitalized.

Lately this sequence from an infected puncture occurs rarely, because the public has been more or less educated to pour iodine or mercurochrome on all wounds, which if done sterilizes the wound and no *Dermatitis Repens* follows.

Now for the treatment which is simple and instantly effective. With a sharp scissors curved on the flat, snip off all the raised epidermis—with flat of the scissors, do not use the point. This must be done thoroughly; that is, completely, to the very margin of the healthy skin all around. Take your time, it is almost painless. Leave not a particle of white raised epidermis. If any is left the spread of the process will continue.

If all of the white raised epidermis is removed, the disease is at an end. The dressing is most important. This must be a wet dressing. The object of the wet dressing is to protect the raw surface, and more important yet, it is to cure and heal the causative infection. Wet gauze, wet with plain warm water, or if you wish a boric acid solution is placed, several layers thick over the denuded surface. This gauze is then covered with a piece of oiled silk (not waxed paper); the oiled silk must overlap the gauze at least half an inch on all four sides. A tight roller bandage is then applied.

See the patient in 48 hours, take off the bandage and in most cases the whole thing is cured. If not, re-apply the wet dressing for another 48 hours.

The raw area is covered with new epidermis very rapidly, if the parts are dressed as I described.

SAMUEL L. WEBER, M. D.

55 East Washington Street.

THE CRUCIAL TEST

It is easy enough to be pleasant
While life flows by like a song,
But the man worth while is the one who will smile
When everything goes dead wrong.
For the test of the heart is trouble,
And it always comes with the years,
And the smile that is worth the praises of earth
Is the one that shines through tears.

It is easy enough to be prudent
When nothing tempts you to stray,
When without and within no voice of sin
Is luring your soul away.
But it is only a negative virtue
Until it is tried by fire,
And the life that is worth the honor of earth
Is the one that resists desire.

By the cynic, the sad, and the fallen,
Who have no strength for the strife,
The world's highway is cumbered today;
They make up the items of life.
But the virtue that conquers passion,
And the sorrow that hides in a smile,
It is these that are worth the homage of earth,
For we find them but once in a while.

—Ella Wheeler Wilcox.

MELANURIA

S. N. Blackberg and Justine O. Wanger, New York (*Journal A. M. A.*, Feb. 4, 1933), observed that melanuria has been reported as occurring in a variety of apparently unrelated pathologic conditions, such as melanotic neoplasms, wasting diseases, intestinal obstruction, lobar pneumonia, pernicious anemia, extensive liver destruction, exposure to the sun's rays, and after roentgenologic treatment. A survey of fifteen cases of melanotic malignant growths treated at the Presbyterian Hospital during the past ten years revealed the fact that melanin was found in the urine of only four of these patients. The authors' results with various tests showed so marked a lack of agreement that they adopted a procedure comprising the essential features of concentration, precipitation and resolution. Their test is as follows: 1. A twenty-four hour specimen of urine is evaporated to one fourth of the original volume. 2. One gram of potassium persulphate is added for each hundred cubic centimeters of the concentrated urine. 3. At the end of two hours, an equal volume of absolute methyl alcohol is added. The precipitated melanin is allowed to settle. 4. The precipitate is filtered off and washed with water till the washings are colorless, then washed with methyl alcohol, to remove any soluble pigments remaining. Finally, it is washed with ether. If the test is positive, there remains on the filter paper a brownish black precipitate, which can be dissolved off with alkali—most conveniently with a 5 per cent solution of sodium hydroxide. Acidification of the alkaline solution causes a reprecipitation of the melanin.

Original Articles

BASIC TRENDS IN THE PRACTICE OF MEDICINE*

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The present economic situation has stimulated interest in studies of economic trends in general, and the practice of medicine has received its full share of attention.

On the basis of these studies, most of which were concerned with the cost of medical service and made in one of the most heated periods of frenzied finance this country has known, conclusions have been, and are still being drawn which would indicate the need of fundamental changes in the practice of medicine.

I do not care to discuss this phase of the subject further than to say that I consider this a poor time to magnify the cost of medical care and to modify our methods of practice on the basis of cost at a time when the medical service dollar is probably more inflated than any other dollar in circulation.

I wish rather to bring to your attention three facts which have profoundly influenced the practice of medicine in the last thirty years. One of these is the effects of mechanization; second the decreased mortality in the younger ages due to preventive medicine and to voluntary birth control, thereby increasing the average age of the population by fifteen years; and the increase in traumatic disabilities.

Busy medical men take very little part in these discussions because they are too busy in the actual care of sick people to generalize and further they are skeptical of generalizations in their field due to their knowledge, gained by experience, that few generalizations can be drawn in the care of sick people and that the success in the handling of sick people is largely in one's ability to individualize. Further when a doctor does attempt generalization, because of the fact that he keeps no accurate statistics on the economic and social condition of patients it may be insinuated that he speaks with practically no authority. However, I am going to assume that observations gained in the practice of medicine over a long

period of time might be of some value. Assuming conservatively that a doctor has had in out-patient, hospital, private practice and in the various clinics made on the average of ten contacts a day with illness (and I believe this is too conservative) for 300 days in the year the sum total of the experience on which he draws his conclusions will approximate 100,000 contacts in thirty years. It is on such a thirty year experience that I am basing my remarks today.

A few years ago we were told that there were not enough doctors and the standards were getting so high that there would not be enough physicians to go around. Now we hear that physicians are increasing a great deal faster than the rate of the population; that there are more physicians per capita in the United States than in almost any other civilized country; that an increased number of medical students are graduating every year; and that in addition we are having a large influx of students being educated in foreign countries. These are the conclusions of the Commission of Medical Education. May I call your attention to the fact, however, that when I began the practice of medicine in 1903 there were more men graduating from medical schools than there are today at a time when the population of this country was 81,000,000 compared to 125,000,000 at the present time.

To the medical graduate of today the question naturally arises as to how the doctor spent his time in those days. Think of his limitations in those days in the way of transportation and communication. Compare for instance the telephone to the speaking tube and the Ford to the horse. There were very few hospitals, very poor roads, practically no nurses or technical assistance, no x-rays or fluoroscopes to economize the time of the doctor and make more accurate the diagnosis of fractures and the recognition of conditions over which we spent a great deal of time and thought and repeated day by day observation, often two and three visits daily to feel the pulse, look at the skin and count the respiration—done very largely by nurses today; taking home a specimen of urine to test it over an alcohol lamp. There were few microscopes. The sense of smell was relied on for much information. A young physician can hardly conceive what a time

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consuming occupation was the practice of medicine. Just as vital a consideration as far as the work of the young doctor is concerned is what changes have taken place in illness and the difference in the character of the diseases he treated. One might say that the doctor was largely kept busy in those years taking care of smallpox, diphtheria, giving medical service and largely nursing service to confinement cases in the home, treating children with infantile diarrheas and rickets, calling day after day on protracted typhoid fever cases, and treating various aspects of tuberculosis and its complications. In looking over some old hospital records the other day I found a record of 65 cases of typhoid fever in one summer in a hospital of less than 100 beds. Great advances have been made in the prevention of diseases in 30 years, advances brought about first by better scientific knowledge of these diseases, and consequently pure water and pure food. Tuberculosis of children as we knew it; of the bones, joints, and glands has practically disappeared due to pure milk; typhoid, due to pure food and pure water. Refrigeration and the automobile have contributed extensively to better food, better air, and more sunshine. In fact it may be said that we have reached that Eutopian state predicted in addresses before graduating medical students some years ago—where the doctor has researched himself out of a job as far as these particular diseases are concerned and the practicing doctor is no longer needed. Sydenstricker in "Recent Social Trends," has shown graphically what has happened in this field. Other diseases are being controlled by other methods where the doctor will always play some part. The part however of the practicing physician is still a matter of controversy. The tendency now is to turn these agencies of prevention over to the few full time medical workers, the actual work however being done by non-medical agencies and individuals and mass treatment. I mean by this the immunization against smallpox, diphtheria, and to some extent scarlet fever; child diet and the prevention of rickets and other nutritional disorders; prenatal and postnatal care; and even the education of nurse-mid-wives for the care of obstetrical cases among certain groups, more especially in the rural districts. Further, the

diagnosis of tuberculosis is being made en-mass. We see medically equipped caravans moving around the country "Mantouxing" and x-raying the population. We see campaigns of vaccination in communities by imported workers. There is no doubt that these activities have resulted in much good and one hears it frequently said that this is the only method by which these particular functions can be properly performed. Thoughtful medical practitioners however look upon these methods as largely educational for in the last analysis if permanent value is to be derived by the local public from diagnostic methods of this type it is only through the application of this knowledge routinely in their practice by the local profession that this will be possible. The logical person to take care of the pre- and post-natal obstetrical case is the doctor who is going to deliver the case. The proper person to immunize a child is the doctor who delivers the child or the one who treats it. The proper person to give Mantoux tests and x-rays of the chest is the doctor that the patient consults and for whose health the doctor is personally responsible, and we of course know that a great many doctors are doing these very things and as time goes on unquestionably the practitioners of medicine will incorporate more and more these preventive procedures into their practice. That they do not do this as a body and all at once is not surprising to me. I remember hearing a fine old doctor at the first medical meeting I attended deny the bacterial origin of disease and offer to swallow all the typhoid germs in the Mississippi River, and on another occasion I remember a losing controversy with a fine old physician in a case where I had made a positive diagnosis of diphtheria by the culture tube and the microscope and he disputed it on the basis of smell and won the argument with the patient. It takes time to spread generally new methods and new technique. The problem of prevention in these fields among the indigent and the unemployed is, it is unfortunately true, an entirely different field in which at least to some extent mass methods must continue.

Leaving consideration of this field with I believe a fair conclusion that the prevention of disease in the early ages has produced profound changes in the practice of medicine let

us consider for a moment *what is the effect of increasing the length of life on the average of fifteen to twenty years.* Bear in mind that this increase has been entirely due to prolonging the lives of the young.

As one looks back over the situation he must realize that our interest in older patients has increased. This is due to some extent to their changed attitude towards themselves. I can well remember the attitude of the profession in general towards older people. I can remember a case in my own family where a very competent surgeon treating a Colles fracture took the attitude that inasmuch as the patient was 60 years of age one should not pay too much attention to deformity. I can remember when to attempt to carefully correct a hip fracture in an old person was looked upon as ill advised practice and that the patient should not be kept in bed or at rest. In other words when treating the young was their chief interest the prolongation of the lives of older people did not seem the important problem. Gradually we have come to spend more time and thought on older people because older people are getting younger every year and as we have changed our point of view we have done a great deal to prolong their lives and add to their comfort and efficiency. What has been accomplished is most strikingly apparent to a doctor of some years active practice although the results are difficult to evaluate statistically. One might mention a few of these results. The use of liver in pernicious anemia and insulin in diabetes in the treatment of these diseases which a few years ago were considered hopeless. Consider for instance the punch operation and the modern treatment of prostatic hypertrophy and what it has added to the comfort and usefulness of older men. Even in the field of cancer, which is looked upon as such a hopeless condition, one no longer sees the disfiguring ulcers on the streets and the large ulcerating breasts so common in the days of early practice. Add to this the prolongation of life and increased comfort in cancer of the bowel, rectum, of the pelvic organs, and in rectal diseases in general. Think of what has been given to the field of brain surgery and brain injuries, the treatment of conditions of the gall-bladder and gastro-intestinal tract, the treatment of empyema and the complica-

tions of upper respiratory disease, by modern surgery. Think again of what better understanding and knowledge of diet is doing for the comfort and prolongation of life in older people, knowledge which unfortunately has not reached the general public to any extent. Again, think of the better understanding of nephritis and hypertension and proper treatment of these conditions. Think of the understanding of the proper use of digitalis for heart conditions, an understanding of the circulation of the heart and what better treatment has done to prolong and save the lives of cases of coronary accidents as compared to the time when the coronary arteries were considered end arteries and an accident to one of these vessels was looked upon as final for the patient. Finally, and more important, in many ways, the better understanding of the psychiatric and neuro-psychiatric patient. If every practitioner would read an address by Dr. Henry M. Hurd based on a life's contact with mental cases he would appreciate what modern medicine has contributed to this great field. Unfortunately the general profession, and more important still, the public, have but the sketchiest idea of facts that are well known to trained psychiatrists on the influence of mental factors and what an important part they play in the breakdown of our middle aged and older population. If the general profession does not take more interest in this field we are going to see clinics established throughout the country operated and controlled by lay people for the diagnosis and the treatment of mental conditions. Recently as a member of the Executive Committee of our local society I listened to the presentation of a young well trained psychologist and his attempt to interest our organization in the establishment of a purely psychological clinic, controlled entirely by psychologists and maintained by individual fees. To me this is fundamentally unsound due to the fact that there is no background of medical experience. However if the general profession neglects the mind and treats only the body they will encourage the organization of groups who treat the mental without regard for the physical. Here again one should not expect too much speed but we should re-incorporate in our practice generally the application of facts crudely but thoroughly appreci-

ated by the old family practitioner who knew the individual, his family, his antecedents, his social status, his worries, and his aspirations. It is true that little has been done in the actual prevention of degenerative disease other than the prevention of crippling diseases in older life by the elimination of early infections. However the underlying cause of many of the degenerative diseases is so largely dependent on hereditary factors it is a problem more for the eugenicist than the doctor. Advances will be made in the earlier recognition and proper handling of these diseases to retard their development.

Many doctors were too slow in adapting themselves to these changed conditions brought on by prevention of disease in early life and have stood still bemoaning the loss of the older type of practitioner and decrying specialism. We all know that there is too much specialism based on little specialistic knowledge and that a modern well trained doctor can take care of a large part of illness. They should realize that the peak of the doctor's work has shifted to other fields. One must realize that specialism and special technic and more technical training are indispensable to the proper diagnosis and treatment of the degenerative diseases. Thirty years ago one could make a good living with a well equipped bag, a desk, and a few chairs. Not so today. Medical practice has improved in quality and complexity requiring better trained doctors and more doctors to perform the necessary service. Again mechanization has been a two edged sword from the standpoint of mortality in general. With the decrease in mortality due to causes above mentioned there has been a great increase in *traumatic disabilities*. It is not generally appreciated what an enormously increasing field of activity this is for the young doctor. May I illustrate this by just one fact. In 1932 disability insurance companies paid the medical profession of Minnesota enough to average \$700 for each individual doctor under the compensation act. This was just \$100 more than I collected and lived on in my first year of medical practice. Unfortunately this work has not been distributed fairly and there are many inequalities because of lay control. This field deserves careful consideration by medical organizations to protect it from exploitation

by lay groups. Individualization of the patient has not been maintained and the medical aspect of this field has not always been kept paramount as it should. *Life Insurance* work has grown greatly and life insurance companies paid to the profession of this country approximately \$20,000,000 in 1932, according to the medical director of a large company. Due to the increasing age of applicants more careful examinations are being demanded and more and more attention is being paid to medical considerations in the selling of life insurance. Here has been a new and developing field for the doctor. I believe insurance companies more and more are considering the qualifications and background of the examiner without limiting it to the medical friends of the general agent as has been done too much in former years.

I have touched lightly on a few of the changing trends in practice which need consideration. We need more thought about how to carry out preventive measures and how best to incorporate them into the practice of medicine; more thought of the proper management of the degenerative diseases and how the profession can best cooperate in taking care of them because good care demands cooperation; and third, thought must be given to the field of traumatic disabilities and how this growing problem may be handled by the profession—a problem made so difficult by the lay domination either on the part of the state or insurance companies. We need clear thinking based on past experience and we need better cooperation. We hear a great deal about cooperation. In actual practice too much of it reminds one of the story told of the P. T. Barnum circus. In one of the sideshows Mr. Barnum kept a lion and a lamb in the same cage to illustrate how the lion and the lamb would lie down together. Someone asked him how they got along. He answered, "Very well, but occasionally we have to replace the lamb."

We must have real cooperation based on mutual respect and unity of purpose. Medical organization in my opinion is the framework. The profession must be well organized and have unselfish, broadminded, and intelligent leadership and the organizing must be done by ourselves. We need well organized state societies with influence enough to pro-

tect the public interest and the independence of our profession in every individual state and in addition to support the national organization in affairs which are of national interest. Our greatest weakness I believe today is lack of organization in many states. Illinois backed by the fearless leadership of its State Society Journal, has been a pioneer in this field and under the able leadership of your President and Secretary is still showing the way.

I have purposely avoided any discussion of the present economic situation because I feel that it is temporary. Five years from now it will be again of interest to look back on the present situation as I can remember the panic of the 90's. The world is recovering from its inferiority complex. The doctor who has stayed on the job and done the day's work is already beginning to feel the effects of economic recovery.

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NEW TRENDS IN CANCER RESEARCH*

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The well-nigh endless field of cancer research may be sub-divided as follows:

1. Gross pathology and histopathology of spontaneous and transplanted tumors.
2. Statistical data as to the incidence of cancer according to various races, organs, sexes, age, etc.
3. Therapeutic efforts, including chemotherapy, surgery, application of radium and x-ray, etc.
4. Study of biological features characteristic for malignant cells and body fluids of cancer carriers.

The scope of this paper is confined to a review of the progress made in the last mentioned field with particular attention to one science which is steadily gaining in importance, viz. biochemistry and biophysics of neoplasms.

The term "kataplasia"¹ comprises a series of phenomena characteristic for malignant tumors; only few of them shall be cited.^{1,2,3}

1. Loss of ability of morphological and physiological differentiation.
2. Formation of metastases.
3. Autonomous growth.
4. Diminished resistance towards exogenous factors such as radium, x-ray, heat, and also towards endogenous factors such as acidosis.⁴
5. Relatively short duration of life.
6. Certain peculiarities observed in tissue cultures, e.g. increased motility of cells, liquefaction of the culture medium,⁵ ability to produce a culture from a single cell.^{4,6}

The origin of such characteristic features can be traced to certain morphological, physical and chemical changes found in cancer cells and in the serum of persons afflicted with tumors. The conductivity of tumor tissue for electric current is increased in comparison with normal tissues.¹ The permeability of tumor cells is increased, due probably to a change of the normal ratio cholesterol: lecithin. As to the serum, its surface tension and freezing point are frequently diminished while the viscosity is increased. The coagulability of the blood is accelerated; the volume of plasma may be increased. In advanced cases an alkalosis has been reported by many writers.⁷⁻¹¹

The basal metabolism in tumor carriers is usually increased.¹² Considerable changes are found in the protein metabolism of cancer carriers. The amount of fibrinogen, nucleoproteids and aminoacidnitrogen in the serum is increased. There is a relative and absolute increase of globulins and a relative and absolute diminution of albumins.^{2,3} An increased amount of ammonia and aminoacids is found in the urine.¹³ The amount of tryptophan in the serum is diminished.¹⁴

As to the mineral metabolism, the amount of potassium, magnesium and phosphorus may be increased while the amount of sodium is usually diminished¹⁵; the calcium contents are normal unless a pronounced cachexia is present. In young malignant cells phosphatides predominate over sterines. No changes of chloride contents have been reported.

The fermentative processes are usually intensified in tumor carriers. The amount of polypeptidases is increased¹⁶ and a pronounced

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glycolysis can be found. The high proteolytic titer of the blood is responsible for autolysis and heterolysis.^{17,18}

Regarding the cholesterol contents of the blood, controversial statements may be found in the literature: while some authors report low cholesterol figures, the majority of writers talk of hypercholesterolemia and also fixation of cholesterol in cancerous and precancerous lesions.¹⁹ It is interesting to note that cholesterol contents of the blood and also the frequency of cancer increase with age; hypercholesterolemia usually accompanies pregnancy; on the other hand, cancers in pregnant women are particularly malignant. While such observations may be ascribed to a simple coincidence, speculative minds may be inclined to seek causative relations between malignancy and an excessive amount of cholesterol in the blood. It is superfluous to emphasize the necessity of extreme caution in drawing premature conclusions from such observations.

Otto Warburg²⁰ was awarded the Nobel prize for the discovery that the process furnishing energy to malignant cells is not oxidation but fermentation, i.e. anaerobic formation of lactic acid from sugar; furthermore, glycolysis takes place in cancer tissue also under aerobic conditions, i.e. in presence of oxygen. The glycolytic property of malignant neoplasms exceeds by far the one of the liver or blood. In this connection it is interesting to note that embryonal cells and regenerating cells also show signs of a very active fermentative metabolism. The excessive amount of lactic acid produced by tumors is synthesized in the liver into sugar.

In view of the fact that intensified respiration limits fermentation, Albert Fischer^{21,22,23} attempted to inhibit this process which is vital for malignant cells, by artificial stimulation of oxidative processes; this can be accomplished in experiments on animals by increasing the partial pressure of oxygen in the inhaled air or still better by a combination of pure oxygen with carbon dioxide. The latter increases the tension of oxygen in tissues; another advantage offered by carbon dioxide is the creation of acidosis which inhibits the liquefaction of plasma or fibrinolysis. When a mixture of

oxygen and carbon dioxide is inhaled, more lactic acid is combusted by tumor tissue and less acid formed in it; as the fermentative metabolism is stimulated by lactic acid and vice versa, it follows that diminution of lactic acid contents of the blood breaks the vicious circle and may affect the tumor. Such treatment may be supplemented by intravenous injections of bivalent iron preparations;²⁴ iron is an important component of oxidative ferments which promote respiration; the latter may be considered as an oxidation katalysis. Encouraging results with such therapeutic methods have been reported by Albert Fischer who experimented with transplanted tumors in mice.

Every unbiased observer will agree with the author that many beautiful theories proved futile when tested on patients: but the primary object of the biophysical and biochemical studies of cancer is not the therapeutic application but perfection of our knowledge of what is called pathological constitution or predisposition to cancer. Undoubtedly such predisposition is an important if not the deciding factor in pathogenesis of cancer and an approach to a revelation of the true nature of such constitution may eventually offer therapeutic possibilities.

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DISCUSSION

Dr. M. G. Bohrod, Peoria: When Dr. Narat chose to limit his remarks to the biological properties of tumors I think it was not only lack of time that influenced him. No other field in experimental tumor research has opened so many new vistas and offers so great a hope as this one. It is a new field and a discussion of it naturally bristles with terms that are strange, and like all strange terms, they seem longer than they are. When we have used them for a while, I am sure they will be more familiar to use and a discussion using them will not appear so academic.

This new approach in cancer research had its origin about the time people began to realize that the parasite of cancer had been discovered, but that it was not a bacterium nor a protozoon, but the cancer cell itself. This is so firmly established that it is strange that a great many people still believe that some day we will find a "germ" that is the specific cause of cancer. I, for one, am rather embarrassed when someone expressed this view, and I am certain we will not find such an organism. I do not mean that bacteria of various kinds and infections may not play some part in the genesis of malignant tumors, but that they have a specific relationship, like the Klebs-Loeffler bacillus for

diphtheria, I doubt very much. I think it can be taken with fair certainty that the parasite of cancer is the cancer cell itself.

Just as when the causative organism of a disease is discovered it becomes necessary to investigate its biological properties, so when the parasite of cancer is determined to be the cancer cell, it is necessary to investigate the biological properties of that cell; and the result of that investigation was what Dr. Narat has given us. It is true that, as he says, we cannot use these data therapeutically at the present time but I think it does hold out a new approach to the treatment of tumors and will ultimately bring some results.

In the first place, if you recognize that the biological properties of the cancer cell are different from those of the surrounding cells there are two different things that can be done. First, it can be approached from the point of view of trying to determine what it is that makes the cancer cell assume these new properties or, second, one can try to determine if it is a cell pre-existent in the tissues among normal cells. Both are possibilities, although the first is more probable. When these things have been found the problem may be approached from the point of view of preventive medicine. There is even the possibility that we may never be able to treat cancer any better than we do now. We may, however, be able to prevent its occurrence. Our treatment for typhoid fever is really not much better than that of Hippocrates, but typhoid fever is becoming an uncommon disease because we prevent its occurrence. Then, when we recognize that the cancer cell has different properties from the surrounding cells, we are on the way to find something which will injure or eradicate the tumor cells without destroying the surrounding normal tissues. Radiotherapy is directed toward that end.

Secondly, when we recognize that the tumor produces profound changes in the body of its host and how early these changes occur, we can attempt to diagnose the occurrence of carcinoma very early by means of these physical and chemical changes. Here, of course, we must be careful not to accept any of the tests which have so far been proposed because none of them attains even the accuracy of ordinary clinical methods. We may hope, however, that some change will be found so specific that the diagnosis of carcinoma will be made much earlier than can at present be done.

There is a great probability, it seems to me, that the ultimate approach to cancer therapy will be largely medical, and that the use of surgery is merely a temporary method for want of something better. This medical approach may be either in the field of prevention or in the attempt at altering the chemistry of the body in such a way as to make the host an unsuitable medium for the cancer cell. I am sure that because of the grief which attends the present treatment of cancer, the surgeon will not be sorry to turn these cases over to his internist friends.

In spite of that fact that this field of the biological properties of tumor cells and tumor host is a new one, and in spite of the fact that it does not yet offer you anything of practical value, I think it is a field in which you should keep abreast of all that is new, because it

is probably here that we must look if we would remove cancer from the list of major menaces, where it is at present.

Dr. J. K. Narat, Chicago (closing): As Dr. Bohrod emphasized, I do not believe we should attempt to utilize any new findings for therapeutic purposes without testing them thoroughly. I am also of the opinion that probably such chemical changes in the blood serum may be utilized for diagnostic purposes in a much better manner than for therapeutic purposes. It is true in cancer research as in many other things that physiological observations may lead to therapeutic means. The main thing is to keep our eyes open to see if we can find any changes which are characteristic of malignant disease.

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GENERALIZED BLASTOMYCOSIS WITH REPORT OF A CASE IN A CHILD

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Cases of generalized blastomycosis while not common are met with sufficiently often to warrant consideration. Blastomycosis as a cutaneous lesion was first called to the attention of the profession by Gilchrist who, in 1894, described an unusual form of dermatitis, from the lesions of which he was able to identify yeast-like organisms. Because of the budding form of the organisms he called them *blastomyces* and the disease produced therefrom blastomycetic dermatitis. In the same year Busse isolated similar organisms from the internal organs as well as from the skin of a fatal case, but he called the condition *saccharomycosis hominis*. Curtis, in 1896, reported a case similar to Busse's. Walker and Montgomery, in 1901, are credited with reporting the first authentic case of systemic blastomycosis in this country. In 1907 Hektoen summarized 13 cases from the literature in which the lungs, bones and abdominal viscera were most frequently involved. The same year Montgomery and Ormsby reported five cases of generalized blastomycosis. In 1908 Ryerson reported two cases with primary involvement of the spine and called attention to the difficulty of differentiating this condition from tuberculosis. Stober, in 1914, reported 13 cases from the Cook County Hospital and reviewed the literature up to that time, making the total number of reported cases thirty-six. Since that time cases are reported yearly from the large clinics throughout the country.

Occurrence. In the United States blastomycosis is found among foreigners and white people living amid unsanitary conditions. Farmers, laborers and those whose occupation brings them in contact with live stock and rotting vegetables are susceptible to the infection. The negroes seem to be quite exempt from the disease. More cases are reported in the vicinity of Chicago than in any other portion of the United States.

Mode of Infection. According to Raiford, the pulmonary system is the most common portal of entry. From the lungs the infection spreads by way of the blood stream to other organs. Bone lesions are common, appearing first in the subperiosteal region of the cortex. In the cases that

have come to autopsy lesions also have been found in the spleen, liver and kidneys.

Pathogenicity. Blastomycosis is a disease of fungus origin caused by the *Blastomyces*, a genus of yeast which morphologically is the same as the *Saccharomyces*. According to Hamilton Montgomery, the blastomycete appears in human tissues as a refractile, double-contour, yeast-like organism which reproduces by budding. Mycelial filaments are not formed. In cultures it presents certain characteristics, including the formation of mycelium. The blastomycetes are usually readily demonstrable under the microscope in the pus obtained from one of the abscesses that form in the course of the disease and to which a drop of ten to thirty per cent potassium hydroxide solution has been added.

Beaver and Furrer of the Mayo Clinic, in an article published in January, 1933, tell of the difficulties that have arisen in the attempts to classify *Blastomyces* and *Coccidioides*. In the former reproduction is assumed to occur only by budding, while in the latter the fungus is reproduced in the tissues by endogenous sporulation and not by budding. Castellani claims that the so-called spores of *Coccidioides* are in reality not spores but represent exaggerations of the granules and spherules common to both *Blastomyces* and *Coccidioides*. If *Coccidioides* reproduces in the tissues by endospores, as has been assumed, and may be classified as an *Ascomycete* of the family *Endomycetaceae*, then a perfect classification for that organism has been attained. A perfect classification for *Blastomyces* is still problematic, but it is believed that it belongs in the same class as *Coccidioides*, except that in the former no endo-sporulating stage has been found.

Pathology. In the lungs a variety of lesions are noted; the process is generally a bronchopneumonitis, being more of a bronchitis than a pneumonia. The lesions are generally adjacent to the large blood vessels and bronchi. The lung lesions are quite indistinguishable from those of tuberculosis, except that the process is more highly cellular and there is less necrosis present. At autopsy blastomycetes both active and dead are found within the protoplasm of the giant cells.

The bone lesions present a similar picture. When portions of the bone have been decalcified

a fibrinous exudate has been found in which bone, cellular detritus and inflammatory cells are enmeshed, together with numerous blastomycetes and many budding cells.

In the spleen, kidney and liver giant cells showing inclusions of dead blastomycetes have been found post mortem.

Clinical Features. Clinically, systemic blastomycosis presents the picture of a generalized infection. In the cases reported in the literature the histories are quite typical, being characterized by general malaise, loss of weight, moderate secondary anemia, leucocytosis, and an afternoon rise of temperature. Pain accompanies the formation of abscesses in the affected parts.

Diagnosis. The diagnosis is made by the finding of Blastomycetes in the smears of sputum and of the pus from the abscesses that form beneath the skin or in the bones.

The essential factors that go to make the diagnosis are the history of the case, the type of lesion, the environment of the patient. If it is a skin lesion the characteristic appearance is that of a papulo-pustule originating in the skin, usually where there is a break in the skin. After a few days the pustule breaks down and ulcerates. If it is a systemic infection the infection takes place somewhere within the body, usually in the lungs, but occasionally in the bones, especially those of the hand and vertebrae.

In the differential diagnosis one must think first of tuberculosis. The clinical picture is so much like tuberculosis that without the presence of Blastomycetes in the smears it is difficult to consider any other possibility. The absence of tubercle bacilli and the finding of Blastomycetes of course settles the question. Secondly, actinomycosis must be thought of. Here again the finding of the ray fungus, typical of this disease, makes the differentiation. Lastly, syphilis is to be thought of. The absence of a history of syphilis and a negative Wassermann reaction renders the diagnosis of syphilis unlikely.

A characteristic feature of Blastomycosis is that as new lesions develop the original lesions tend to spread and grow larger.

Prognosis. Although many writers state that these systemic cases of Blastomycosis get well, only one author has specifically cited a case that recovered.

Treatment. Large doses of potassium iodide have been recommended, with dressings of mer-

curic chloride or copper sulphate. General hygienic treatment such as one would employ in tuberculosis is in order.

REPORT OF CASE

The case I wish to report is that of a child of three years who was brought to me the latter part of May, 1932, because of redness and swelling on the left side of the neck which had come on following a tonsillitis and was gradually increasing in size and extent. The mother stated that at the advice of her family physician she had applied hot applications. On examination the mass was about the size of a large orange, fluctuating, diffuse and not well circumscribed. I incised the mass and evacuated several ounces of thick, greenish, offensive pus. The mother dressed the wound at home and it completely healed. During this time the child was allowed to play about the yard and the mother noticed at times that as she played she would often scratch the scar.

About six weeks after the opening of the abscess and after the wound had healed, the mother noted a large ulcer forming at the lower angle of the original wound on the neck. She treated this with hot boric dressings, but it continued to increase in size and extend farther around the neck. At about the same time she noticed small pea-sized papulo-pustules on the left arm, left knee and chest. Then she brought the child to the office.

On examination I found a large ulcerating area on the left side of the neck, about two or three inches in diameter, surrounded by a purplish red band fading into normal skin. The edges of the ulcer were raised and quite irregular. The base was bathed in sero-sanguinous pus which when wiped off left a papillomatous granulating base. On the crest of each papule appeared a pinpoint area of pus.

Examination of the arms and legs showed numerous papulo-pustules, slightly elevated, firm, bluish red in color and ranging in size from coffee bean to a five cent piece. These areas were closed and looked exactly like water blisters. Similar lesions were found on the back and buttocks. Violet ray and local treatment were tried without success. It occurred to me that this might be Blastomycosis, so the child was sent to the hospital where more complete laboratory studies could be made.

On admission, August 10, 1932, she weighed 32 pounds. Albumin was present in the urine, together with numerous hyaline and granular casts, red blood and pus cells. Blood examination showed 29,300 leucocytes, 3,790,000 erythrocytes, and 65 per cent hemoglobin. Differential white count showed 85 per cent neutrophils, 13 per cent lymphocytes, 1 per cent large mononuclears, and 1 per cent mast cell. Wassermann test was negative on the child's blood and on that of the father. Examination of the stool revealed 2+ positive blood, but no yeast or bacteria.

On admission to the hospital the child presented the appearance of a patient with nephritis. She was quite anemic, the face was somewhat swollen, and the legs and arms were swollen and puffy, as though edematous. Temperature was 104.6°. She had a severe bronchial cough and vomited practically all the food given her.

On August 11, the day after entrance, temperature was

100.6°. On the morning of the 12, it was 104.6°, then it gradually receded until on the 17, it was 103.4° and on the 19 of August, 101.2°. For the next week it fluctuated between 97° and 102°. Third week it ranged between subnormal and 101°. On the afternoon of September 4, her temperature rose suddenly to 104°, then came down gradually to 99°, where it remained until September 13, after which it again fluctuated between normal and 102° until she left the hospital on September 24.

The albumin present on admission disappeared within a few days, but reappeared on September 4 and 5. On August 25 the urine gave a slight reaction to sugar and on August 26, it was loaded with red blood cells.

Because of the severe vomiting and the presence of blood in the stool, she was given oatmeal and barley water, protein and lactic acid milk, and other simple, easily digested foods.

On admission smears were made from the pus in the

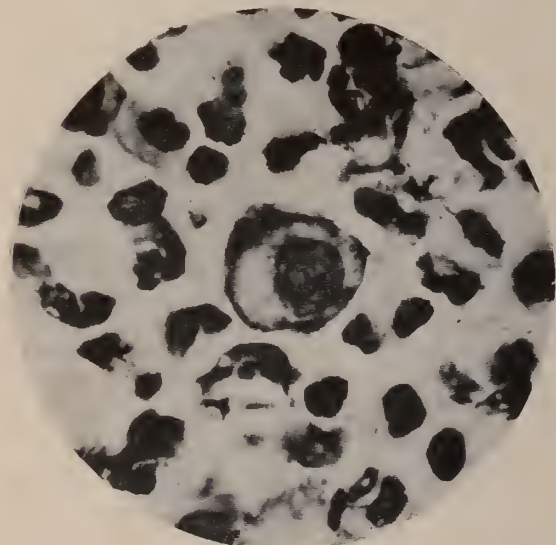


Fig. 1. Microphotograph of smear made from pus at edge of the open ulcer on the neck in which yeast cells were found.

open ulcer on the neck, but no tubercle bacilli or other organisms were found. Because of the history of the case any the type of lesions actinomycosis and blastomycosis were thought of. On August 18, by going deeply into the pus at the edges of the wound we were able to get smears in which yeast cells were found (Figs. 1 and 2). These cells were round, ranging in size from that of a red blood corpuscle to several times larger, surrounded by a dark capsule with a lighter circular area inside the capsule, within which there was a dark mottled field occupying one-half to three-fourths of the cell. These cells were double contoured and showed budding. A clinical diagnosis of systemic blastomycosis was made.

Having made this diagnosis, a careful inquiry into the family history and living conditions revealed that the parents, one brother and two sisters had always been perfectly well. The child was born in Chicago. The home was a low building behind a two apartment building, originally erected for a garage. It was next to the alley, dark and damp inside but scrupulously clean. A

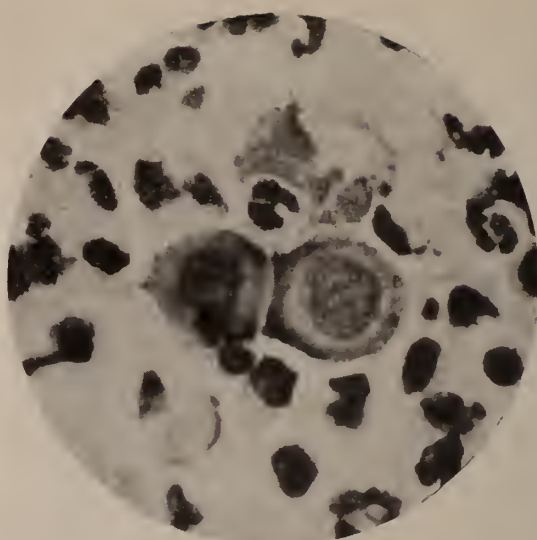


Fig. 2. Microphotograph of smear showing yeast cells.

search for fungi was made about the house and in the yard but none were found. This was done particularly because the mother had stated that while playing in the yard between the incising of the first ulcer and the appearance of the second, the child frequently scratched her neck.

Immediately on confirming the diagnosis of blastomycosis, moderate doses of potassium iodide were begun. This medication did not agree with the child; the vomiting continued and she developed a severe diarrhea; after one week it was discontinued. The lesions were first dressed with 10 per cent calomel ointment in cold cream but without effect. Copper sulphate dressings were tried with no result. Mercuric cyanide was then applied and it stopped the extension of the ulcer on the neck within a few hours.

During her stay in the hospital new lesions developed over the body, in the scalp, over the left eye, on the legs,



Fig. 3. Type of lesion present about knee.

and about the rectum. Figure 3 shows the type of lesion present. In the beginning these lesions resembled water blisters. Within two or three days they broke down into ulcers, becoming covered with a brownish crust under which serosanguinous pus was found. The yeast cells were found in the granulating or papillomatous pustules and in the pus obtained from the edges of the ulcer in the base. The lesion about the rectum was so severe that it involved the whole surface of the bowel, which finally sloughed out like a shell. The mercuric cyanide dressings were applied until the progress of the ulceration subsided and then ordinary sterile vaseline was used. By September 24 practically all the lesions were healed with the exception of one knee and the one on the buttocks. The vomiting and passage of blood from the bowel continued and the child was steadily losing weight.

Because of economic stress the parents took the child home on September 24. The treatment was carried on at home, but she steadily lost ground. She remained under my care until about Christmas time, when on the advice of friends, the parents took her to the Children's Clinic at Michael Reese Hospital. She lived but three days after admission to this hospital, dying on January 9, 1933. A postmortem examination was made and I am indebted to Dr. Otto Saphir, the pathologist, for a copy of the report which I append.

AUTOPSY EXAMINATION

Pathologic Diagnosis. Acute and chronic ulcerative and pseudomembranous enterocolitis; perforating ulcer of ileum; acute fibrinopurulent peritonitis (circumscribed); acute purulent bronchitis; confluent bronchopneumonia; acute fibrinous pleuritis; dilatation of heart; hyperplasia of Peyer's patches and mesenteric lymph nodes; cloudy swelling of kidneys and liver; fatty degeneration of liver (centrally located); marked emaciation; anemia; petechial hemorrhages of chest wall; acute ulcerative stomatitis; atrophic scars of skin.

External Examination. Examined one hour postmortem. The body is that of a remarkably emaciated and pale white female child of three and one-half years, weighing 5.6 kilograms and measuring 82.5 cm. in length. All the bony prominences and landmarks are plainly visible. The face is wrinkled, aged and sallow. The skin hangs in loose folds over the bones. The body is still warm and liver and rigor mortis are absent.

Crinkled, white, thin atrophic scars are present over the left side of the neck and right knee. These are sharply demarcated from the normal skin and of irregular shape. That on the neck is elliptical and about 4 cm. long; that on the knee is 3 cm. in diameter. Coursing through the transparent scars capillary vessels are visible. Similar but smaller scars are present on the forehead, right side of the neck, buttocks and scattered over the limbs. About 20 small petechial spots are present on the anterior aspect of the chest. There is an area of ulceration 1 cm. in diameter on the mucosa of the left cheek.

Internal Examination. The subcutaneous fat is practically absent. The pleural and pericardial cavities show no changes.

On opening into the peritoneal cavity the transverse and descending colon are distended with gas. The trans-

verse colon is adherent to the stomach with fibrinous adhesions and the descending colon is similarly adherent to the parietal peritoneum.

The heart is enlarged and dilated, weighing 50 grammes. The endocardium is smooth and shiny and the valvular apparatus is intact and normal. The sinuses of Valsalva and the coronary mouths and vessels show no changes. The myocardium is red-brown and measures 5 mm. and 1.5 mm. in the left and right ventricles respectively. The aorta is of normal elasticity and presents no gross changes.

The lungs are almost entirely white. The right lung weighs 100 grammes. The pleural surface is smooth and shiny, except in portions of the upper and middle lobes which are dull. The left lung weighs 60 grammes and its surface is smooth and shiny except for a few areas in the lower lobe. On palpation, the right upper and middle lobes feel quite firm except for the peripheral margins. In the left lower lobe can be felt some areas of consolidation. On section of the right upper and middle lobes the surfaces are gray-pink with many dark red granular areas which are raised above the cut surface. The right lower lobe presents a similar, but less extensive picture. The rest of the lung is air-containing and crepitant. The trachea and primary bronchi contain a pink frothy fluid.

The liver is firm, yellow-brown, and weighs 380 grammes. The surface is smooth and shiny. On section, yellow white circular areas 1 mm. in diameter are seen throughout the entire surface. These areas are surrounded by the gray periportal spaces and show in their centers the pinpoint brown central zones.

The spleen is small, slate blue, and weighs 30 grammes. On section, the trabeculae are distinct.

The kidneys are pale pink and together weigh 100 grammes. The capsules strip with ease leaving a smooth surface. On section, the tissue bulges beyond the cut surface. The architecture of the cortex is obscured and the boundary between the cortex and medulla is faint. The pelves, ureters and bladder show no changes.

The uterus, tubes and ovaries show no changes.

The pancreas and suprarenals appear normal.

The mucosa of the colon is everywhere reddened, granular and thickened. The descending colon and rectum show many gray-white membranes on the mucosa which are easily peeled off, leaving ulcers of irregular shape and size with red granular bases. These ulcerations run in no special direction.

In the ileum about 9 inches from the ileo-colic junction is found a circular ulcer 1.5 cm. in diameter. The edges of the ulcer are smooth and thickened. The base of the ulcer consists of a thin membrane. The lower ileum also shows a thickened and reddened mucosa with enlarged solitary and aggregated lymph follicles. The mesenteric nodes are enlarged, soft and gray.

The thyroid shows no gross changes.

Section of the rib shows red bone marrow.

No permit for examination of the brain was obtained.

Anatomic Diagnosis. Chronic ulcerative and pseudomembranous colitis and proctitis; chronic ulcerative enteritis; perforating ulcer and ileum; acute fibrinopurulent peritonitis (circumscribed); confluent bronchopneumonia; acute fibrinous pleuritis; dilatation of heart;

hyperplasia of Peyer's patches and mesenteric lymph nodes; cloudy swelling of kidneys; fatty degeneration of liver (centralis); marked emaciation; anemia; petechial hemorrhages of chest wall; ulceration of buccal mucosa; atrophic scars of skin.

Microscopic Examination. Heart: Sections through the myocardium reveal no histopathological changes.

Lungs: In some portions of the sections the alveoli contain many degenerated red blood cells, a pink granular precipitate, a few polymorphonuclear leucocytes and large mononuclear cells. Other areas show the alveoli to be so densely blocked with the polymorphonuclear cells that the red cells which are also present are almost entirely hidden from view. In still other areas the alveoli contain varying amounts of pink staining, homogeneous serum precipitate with only a few cells. Many of the bronchi and bronchioles are filled with polymorphonuclear cells. Others have almost entirely disappeared and have been replaced with a cellular exudate, consisting predominately of the polymorphonuclear cells. In these portions only remnants of the bronchial epithelium are present. The blood vessels show up no histopathological changes. The pleural lining is thickened and contains strands of fibrin with red blood cells.

Liver: The central veins are empty. The cells near the central veins show marked vacuolization. Those near the periportal spaces are swollen and granular.

Spleen: The malpighian bodies show no germinal centers. There are no histopathological changes seen.

Kidneys: The glomeruli and blood vessels show no changes. The epithelial cells of a large majority of the convoluted tubules are swollen and granular. Their lumina contain both a homogeneous and a granular pink staining material.

Suprarenals and Pancreas: Show no histopathological changes.

Mesenteric Nodes: Show evidence of hyperplasia and invasion by polymorphonuclear cells.

Thyroid: Shows no histopathological changes.

Gastro-Intestinal Tract: In many sections through the small and large intestines the mucosa has entirely disappeared and has been replaced in some areas by necrotic tissue, in other areas by polymorphonuclear cells, and in still other areas by blood-filled capillaries, endothelial cells, plasma cells, lymphocytes, and a few polymorphonuclear leucocytes. The submucosa and muscularis also contain many endothelial cells, plasma cells, and polymorphonuclear leucocytes. The serosa is covered by granulation tissue similar to that in the mucosa. The lymph follicles and Peyer's patches show evidence of marked hyperplasia.

Bacteriologic Examination. Smear from colon: Large gram-positive bacilli.

Culture from colon: Gram-positive diplococci and gram-positive bacilli.

Mesenteric node: Large gram-positive spore-forming bacilli.

The organisms present in all represent the intestinal flora.

Culture of blood clot: Negative, 72 hours.

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"HYPOFERRIC" ANEMIA†*

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CHICAGO

The recent literature contains many reports concerning a hypochromic anemia in women associated with achlorhydria, which was first described by Faber in 1909.¹ This type of anemia has been designated by various terminology, the most common names being simple achlorhydric anemia,² primary hypochromic anemia,³ idiopathic hypochromic anemia,⁴ and hypochromic anemia with achlorhydria.⁵ The symptomatology of this condition most commonly given is as follows:

Age: 20 to 50 years

Sex: Preponderantly in women

Subjective symptoms:

Weakness

Dyspnea

Gastro-intestinal disturbances

Menorrhagia

Parasthesias

Objective symptoms:

White Pallor

Atrophy of the tongue

Splenomegaly

Brittleness and spooning of the finger nails

Laboratory findings:

Blood: Anemia with low color index .4 to .6

Average R.B.C. 3.5 to 5 million

Average hemoglobin 30 to 60 per cent.

Microcytosis

Achromia of the erythrocytes

Achlorhydria or hypochlorhydria

Normal icterus index

Course and treatment:

Chronicity

Specific response to large doses of iron

Tendency to relapse without treatment

*From the departments of Medicine and Chemistry, Northwestern University Medical School.

†Read before Section on Medicine of the Illinois State Medical Society, May 16, 1933.

Pathology:

Normoblastic and erythroblastic hyperplasia in the bone marrow

The clinical picture is, however, subject to many exceptions and variations, the only constant findings being the anemia with low color index and the response to iron. Since other types of anemia may have these same features, the question arises as to whether or not this is a new disease or simply a variation of a familiar type of anemia.

Many authors have assumed that hypochromic anemia with achlorhydria is a disease entity and names such as "simple achlorhydric anemia" and "primary hypochromic anemia" have probably strengthened this assumption in the minds of the readers. Recently, however, other writers^{6, 7, 8} have discussed the possibility that this type of anemia may be a manifestation of iron deficiency with a close relationship to other types of iron deficiency anemias, e. g., anemia from chronic hemorrhage. Dameshek⁸ states that "it is possible that primary hypochromic anemia with its various manifestations may represent part of a greater syndrome of iron deficiency ("hypoferrism") and that certain cases of anemia which are definitely secondary may also be included in this syndrome." Evidence in favor of this recent view is presented in this paper and it is proposed that all anemias with a low color index responding to iron be included under a general grouping termed "hypoferric" anemia.

In order to explain the pathogenesis of anemias resulting from iron deficiency, it may be well to review certain features of iron metabolism. The human body normally contains about 3 grams of iron, the majority of which is contained in the hemoglobin molecule. Iron in the food is partly ionized in the stomach and then absorbed from the upper intestine and re-excreted into the lower intestine and colon, only about 1 mg. being excreted in the urine daily. Under normal conditions the minimum daily requirement for iron equilibrium is about 10 mg., but 15 mg. is desirable, at least until more is known about the factors which influence iron metabolism. Sherman⁹ reports that the average American dietary contains from 15 to 22 mg. of iron daily. A group of eight student nurses in our clinic, whose food is served cafeteria style, were found to have a daily iron intake of 10.2 to 17.0

mg. with an average of 12.2 mg. (calculated from Sherman's tables). Since the erythrocytes destroyed daily contain hemoglobin equivalent to about 100 mg. of iron, it is evident that the greater percentage is stored or utilized for new hemoglobin formation. Physiologic loss of iron from the body occurs through menstruation and pregnancy. If the loss of blood during a single menses is approximately 180 cc.,* this would be equivalent to about 80 mg. of iron or to 960 mg. per year. No accurate data have been found concerning the iron content of the newborn infant, but it is known that the iron reserve is high and that, therefore, the loss of iron by the mother must be considerable. It is evident that there is a very small margin of safety in maintaining the normal iron requirement, especially in women, and pathologic factors disturbing this maintenance could easily result in an iron deficiency.

Factors which tend to produce an iron deficiency are (a) decreased intake, (b) deficient absorption from the intestinal tract, and (c) increased loss. The intake is often limited by the improper choice of diet, lack of appetite, difficulty in swallowing (Plummer-Vinson syndrome), or inability to purchase iron-rich foods because of poverty. Absorption of iron from the food may be interfered with by a deficiency of hydrochloric acid in the stomach. The importance of free acid for the absorption of iron has been demonstrated by Mettier and Minot.¹¹ They have found that iron administered in an acid medium to patients with hypochromic anemia with achlorhydria gives a greater effect than the same dose of iron given in an alkaline medium. Also, operations on the stomach resulting in lack of hypochloric acid or too rapid emptying may result in deficient absorption. Hemorrhage is the most common cause of increased loss of iron from the body. Increased metabolism resulting from infections or hyperthyroidism may also be a cause of increased output of iron.

Relation of Iron Deficiency to Hypochromic Anemia

During the past one and one-half years, 21 adults with marked chronic hypochromic anemia have been studied in our clinic for blood diseases at the Northwestern University Medical

*DeLee¹⁰ says that the loss of blood during normal menses is from 3 to 6 ounces.

School.* The anemia in all of these patients could be explained on the basis of iron deficiency according to various factors mentioned above. Five of these patients did not report for gastric analysis and for this reason only 16 cases (14 females and 2 males) are included in Table 1.

tents. Eleven patients had complete achlorhydria and three had marked hypochlorhydria. All gastric analyses were performed after stimulation with 0.5 mg. of histamine and no test meals were used. Repeated pregnancies and menorrhagia were a common cause of increased

TABLE 1. PATIENTS WITH HYPOCHROMIC ANEMIA

Case No.	Age in Years	Sex	Diet ¹ Deficiency	Free Acid ²	Iron Loss		Duration of Anemia
					Pregnancies	Other Causes	
1	39	*	+ + +	0 0 0 0 0	8	0	2 Years
2	41	*	0	0 0 0 0 0	7	Bleeding from abortion	2 Years
3	20	*	+ +	0 0 0 0 0	2	0	1½ Years
4	33	*	+ +	0 0 0 0 0	2	0	4 Years
5	31	*	+ + +	0 0 0 0 0	4	Bleeding from abortion	6 Months
6	32	*	+ +	0 0 0 5 5	2	Abortions, operation	4 Years
7	47	*	+ +	0 0 0 0 0	3	Toxic adenoma of thyroid	2 years
8	40	*	+ +	0 0 0 0 0	9	0	3 Years
9	27	*	+ +	0 0 0 0 0	3	0	5 Years
10	46	*	+ + +	0 0 0 0 0	5	Menorrhagia, bleeding hemorrhoids	7 Years
11	18	*	+ +	0 0 3 4 0	0	Menorrhagia	3 Months
12	41	*	+ +	0 0 0 0 4	4	Menorrhagia	2 Years
13	34	*	0	0 0 0 0 0	1	Menorrhagia	5 Years
14	46	*	+ +	0 0 0 0 0	6	0	12 Years
15	42	†	+ +	0 7 16 19 13	—	Bleeding hemorrhoids	9 Months
16	56	†	+ + +	0 0 0 0 0	—	0	6 Months

1. Diet. + + + = no meat; + + = small portion of meat 2 or 3 days a week.

2. Gastric acidity. Figures indicate fasting and 4 twenty-minute specimens following 0.5 mg. histamine. No test meal used.

*Female.

†Male.

The ages varied from 18 to 56 years. The average erythrocyte count for the entire group was 4.1 million and the hemoglobin was 6.7 gm. per 100 cc. (46 per cent.), giving an average color index of .58. Judged on the basis of the amount of meat eaten, the diets in all but two patients were deficient in iron-containing foods. The diet was considered deficient when no meat was eaten (3 plus) or only a very small helping twice or three times a week (2 plus). It was usual for the patient to say that she "never cared for meat" or had "never been a great meat eater." All but one patient had a deficiency of hydrochloric acid in the stomach con-

tain of iron from the system. All but one (case 11) of the female patients had had one or more pregnancies. From an analysis of this group of cases it seems that faulty diet, achlorhydria and repeated pregnancies or loss of blood were common etiologic factors in producing these anemias.

The high degree of chronicity of hypochromic anemia with achlorhydria has been referred to by many authors^{1, 12} and is shown by the duration of symptoms in the table. When a patient with achlorhydria develops a chronic anemia following pregnancy or bleeding the recovery is greatly retarded, especially when the diet is deficient. Strauss and Castle¹³ have recently pointed out that the hypochromic anemia of

*The technical work on the patients was performed by Miss Elizabeth Jane.

pregnancy is associated with deficient diet, achlorhydria or both and have drawn analogies between this condition and so-called idiopathic hypochromic anemia. The association of pregnancies with the anemia in many of our cases indicates that they were a factor in producing the anemia and that faulty diet and achlorhydria were instrumental in preventing recovery afterwards. The inability of a patient with a deficient diet and achlorhydria to recover from chronic hemorrhage is illustrated by Case 5. This patient was a colored woman, 31 years of age, who suffered from bleeding from an incomplete abortion during August and September, 1932. Following a curettage in October there was no more loss of blood except from normal menses. During the fall the patient's diet was deficient because of lack of appetite. She continued to have marked weakness and in March, 1933, her erythrocyte count was 3,780,000 and hemoglobin was 4.5 gm. per 100 cc. (30 per cent.) with a color index of .42. Gastric analysis after histamine showed no free acid, and recovery was dramatic after large doses of iron had been given. Within four weeks the hemoglobin had increased to 10.7 gm. (74 per cent.) and the patient felt entirely well.

Chronic hemorrhage is known to produce a hypochromic anemia in a patient who has a normal gastric acidity. One patient (Case 15), a male, had had intermittent profuse bleeding from hemorrhoids for nine months. During that time he had stopped eating meat because he could not afford to buy it. When this patient was first seen the erythrocyte count was 4.05 million, hemoglobin was 6.8 gm. per 100 cc. (47 per cent.), and the color index was .60. The gastric acidity was only slightly below the normal limits. With large doses of iron, the erythrocyte count increased to 6.5 million and the hemoglobin to 11.7 gm. (80 per cent.) within six weeks. The fact that only one patient with marked hypochromic anemia from hemorrhage and practically normal acidity has come to the clinic for blood diseases suggests that this type of anemia is not very chronic and tends to recover spontaneously when the bleeding is controlled.

Achlorhydria seems to be the most important factor both in the production and delaying of recovery of a hypochromic anemia. With the small amount of iron in even a normal diet and

a deficient absorption, it is not remarkable that such an anemia continues over long periods of time. The achlorhydria may either be hereditary or acquired and might well be independent of the anemia. Meulengracht¹⁴ observed achlorhydria in 18 individuals who later developed hypochromic anemia. The gastric acidity does not usually return after the patient recovers. Gastric analyses were repeated in 9 cases in this series after the blood picture became normal following treatment and in no instance was there return or increase of free acid.

The relationship of chlorosis to hypochromic anemia with achlorhydria has been discussed by Bloomfield⁶ who feels that there is no close differentiation between the two conditions and that they probably "constitute a syndrome without fixed characteristics." It is reasonable to think that an iron deficiency or chlorosis may occur in young girls with normal gastric acidity from such factors as a deficient diet, menorrhagia, and an extra demand for iron for growth. Case 11, a girl of 18, whose condition came the nearest of any in this group to being a chlorosis, had taken a deficient diet, had a very low amount of free acid in the gastric juice, and complained of moderate menorrhagia—all factors that are commonly associated with hypochromic anemia in older women.

The nutritional anemia of infants and children should also be mentioned in connection with iron deficiency, since these anemias are characterized by a low color index and respond to iron therapy. Deficient diets, infections and diarrheas are common factors in the production of this anemia. Faulty absorption of iron resulting from decreases in the gastric acidity has not been sufficiently studied to determine whether or not it plays a role in this condition.

Course and Treatment. Patients with hypochromic anemia usually respond specifically to iron in large doses, e.g., ferric ammonium citrate, 6 grams daily. Recovery occurs in two or three months in the patients with achlorhydria whereas in cases following hemorrhage, recovery may occur earlier.¹⁵ Subjective and objective symptoms, with the exception of achlorhydria, tend to subside and disappear as the remission progresses. Heath¹⁵ and others have found that some cases of anemia with achlorhydria tend to relapse when iron is stopped whereas others remain well without continued

treatment. Only one patient in our series showed any tendency to relapse when iron was discontinued and she had a toxic adenoma of the thyroid. All of the patients were cautioned to take a diet with a high iron content and none of them has had a pregnancy or excessive bleeding since remission has been complete. It is too early to say that relapse does not usually occur in such a group when ideal conditions prevail, but at least we can say that this tendency has not been shown up to the present time. The effect of liver and copper in addition to iron has not been sufficiently established to warrant their routine use in the treatment of hypochromic anemia at this time.

Comment. The question is still to be answered as to whether or not hypochromic anemia with achlorhydria is a specific disease with some possible unknown factors such as weakened regenerative power of the bone marrow, failure of the reticulo-endothelial system to retain iron, or a hormone effect playing a role in the production of the anemia. All of the hypochromic anemias with achlorhydria seen in this clinic could be explained rationally on the basis of iron deficiency. It is possible that this condition exists without evident disturbance of iron nutrition, but such cases have not come to our attention. Atrophy of the tongue and changes in the finger nails may be manifestations of general iron deficiency since there is a return to normal following therapy. The fact that these symptoms are not usually observed in hypochromic anemia from chronic hemorrhage can be attributed to the less chronic nature of this type of anemia. That hypochromic anemia with achlorhydria is an iron-deficiency disease is evidenced by the work of Heath *et al*,¹⁶ who have shown that iron given parenterally is utilized almost quantitatively for the formation of hemoglobin. Until more evidence is available in favor of the specific nature of hypochromic anemia with achlorhydria, it seems more logical to classify this syndrome under the general heading of iron-deficiency anemia or "hypoferric" anemia.

SUMMARY AND CONCLUSIONS

1. Features of the normal iron metabolism are discussed and attention is called to the low margin of safety in the maintenance of the normal iron requirement.

2. Iron deficiency may be brought about by

a decreased intake, a faulty absorption, or an increased loss of iron.

3. Sixteen cases with hypochromic anemia (12 of them with achlorhydria) are analyzed and explained on the basis of iron deficiency.

4. It is suggested that hypochromic anemia with achlorhydria is not a clinical entity and should be included along with hypochromic anemia of chronic hemorrhage, of pregnancy, of young women (chlorosis), and of children under the general heading of hypoferric anemia.

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DISCUSSION

Dr. Richard F. Herndon, Springfield: It is no longer proper to state that an individual has anemia. The type of anemia should be specified and with it one should have a definite concept not only of the cause of the anemia but also of the mechanism which produces it. The reason for this is that we now have certain well defined therapeutic procedures which can be relied upon to correct certain disturbances of the bone marrow. Applied to the proper cases these procedures will give satisfactory and often

brilliant results but if applied haphazardly will naturally be followed by disappointment.

The connection between achlorhydria and anemia has long been known but a clear differentiation of this symptom complex has only been made in the last few years. In proportion to its frequency and importance, primary hypochromic anemia is still not sufficiently familiar. The multiplicity of names that have been applied to it by various authors has undoubtedly added to the confusion of the student. The new name of hypoferric anemia suggested by Dr. Alt impresses me very favorably as it is not only descriptive but suggests etiology, mechanism and treatment.

Clinically, the symptoms are simply pallor, a lack of a sense of well being and excessive fatigability. When the anemia is more marked there is edema, shortness of breath and prostration. The reason that so many of these patients are really incapacitated is that in any anemia the symptoms are proportional to the hemoglobin level rather than the red cell level. The histological features of the blood are mainly those of deficient formation.

Inadequate or poorly balanced diets are almost the rule. The obvious and characteristic defects are a low intake of iron and of protein other than milk. A typical poor diet consists of bread, butter, milk, potatoes, cereal, cake and pastry, with meat, fruit and green vegetables only once or twice a week. However, it should be stressed that typical cases develop on excellent diets, showing that achlorhydria alone or a state associated with it is capable of conditioning a deficiency of blood building materials. Furthermore the simple administration of hydrochloric acid is not followed by improvement.

In short, hypochromic anemia is a deficiency state correctable by iron therapy. This deficiency is conditioned by one of three factors. First, a lack of sufficient iron in the food necessary for blood formation. Second, an abnormality in the gastro-intestinal tract preventing the proper utilization of such iron. Or third, a combination of these two factors.

Such a conditioned state may remain latent until some additional stress or strain is thrown upon the individual, such as occurs at puberty, the menopause, during pregnancy, with menstrual disorders, and so on.

The interrelation of this condition and perniciosis anemia has recently been brought out in a very interesting article by Dr. Heath of Boston.

Now, I am going to make a somewhat unorthodox statement. Cases which I have originally diagnosed as primary hypochromic anemia seem to fall into two classes. The one in which deficient diet or additional stress has seemed to be the essential feature. These cases have usually made complete and permanent recoveries, often with the return of normal gastric acidity. Perhaps they should not be called primary or idiopathic cases because the cause is apparently definite and curable. The other group have made equally good recoveries, but have not regained their gastric acidity and have tended to relapse when deprived of their additional iron.

Finally I would like to say that these cases need particularly careful study, not only because so much can be done for them but because under controlled conditions spontaneous recovery apparently does not occur.

HEMOCHROMATOSIS WITH CIRRHOSIS*

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CHICAGO

Hemochromatosis is of interest as a chronic metabolic disease that results in the accumulation in various organs and tissues of enormous quantities of iron. The iron deposit is most marked in the liver where distinctive microscopic changes are produced that lead to cirrhosis. The term, hemochromatosis, was first applied by von Recklinghausen in 1889 to cases with general pigmentation. Previously, in 1871, Troisier had observed "bronzed diabetes," and in 1882, Hanot and Chauffard had described cases of diabetes with pigmented, cirrhotic livers.¹ The disease is rare but probably more common than is generally supposed. In 1907 Fletcher collected 35 cases with diabetes. In 1911 Sprunt found 50 cases of which 13 showed no diabetes. In 1924 Mills, in reporting 10 cases found at necropsy during one year, stated that there were less than 100 cases in the literature. At the present time some 200 cases have been recorded.

CASE REPORT

J. K., a single white male, 44 years of age, by occupation a furniture salesman, entered Passavant Memorial Hospital in January, 1933, because of glycosuria, dryness of the mouth and weakness. A darkening of the skin of his face, neck and hands had first been observed by friends about four years previously, at the time of a hemorrhoidectomy, but had not attracted his attention. Glycosuria was discovered in July, 1929, and a qualitative diet prescribed; later in the same year no sugar was found. Dryness of the mouth appeared two years and weakness one year ago. Nocturia had been present for two months. The patient's mother died of carcinoma of the face. Eight siblings are well although one brother living in a distant State is said to have a similarly dark skin.

Examination showed a fairly well nourished, flabby man with a slaty color of the face, neck, hands and feet. A blue color was apparent beneath the nails. The trunk appeared slightly but definitely cyanotic. Telangiectases were present over the nose and cheeks. The liver was palpable a hand's breadth below the costal margin; the edge was hard, sharp, and not tender. The spleen was not palpable. Signs of established collateral circulation were absent on the abdominal wall; small external piles were present. No ascites. Examination was otherwise negative save for chronic tonsil infection.

The urine contained sugar in varying amounts (5-23

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gm. daily). Successive fasting blood sugar determinations were 137, 154, 218, 162, and 152 mgs. per 100 c.c. After 100 gm. of glucose a typical diabetic curve was obtained; after 3 hours the blood sugar level was 250 mgs. A slight secondary anemia was present. Blood Wassermann was negative. The van den Bergh test was negative; no increase in bilirubin was found. Bromsulphthalein clearance was normal. Ninety per cent of phenolsulphonephthalein was excreted two hours after intravenous injection.

The association of apparent liver cirrhosis, pigmentation of the skin and diabetes naturally led to the suspicion of hemochromatosis. A biopsy of the skin of the dorsum of the hand was performed; brown, granular pigment in the more superficial layers of the corium gave a strong Prussian blue reaction for hemosiderin. No pigment was found in the cornea on examination with the slit-lamp. In view of the suspected role of copper in the production of certain cases of hemochromatosis a history of exposure was sought. It was learned that for years the family had used a copper tea-kettle which may or may not be of significance. Alcoholism was denied.

The only other point of clinical interest was the hypoglycemia produced by small doses of insulin. On January 27, after a fasting blood sugar level of 162 mgs., fifteen units of insulin reduced the blood sugar to 101 mgs. in one hour, to 43 mgs. in two hours and to 37 mgs. in three hours. At this point food was given. The low blood sugar level was accompanied only by slight weakness and nervousness. The tendency to insulin hypoglycemia, interpreted as due to a subnormal glycogen deposit in the liver, and the high phenolsulphonephthalein output were the only signs pointing to impairment of hepatic function. In the past four months the condition of this patient has remained unchanged. Small doses of insulin have been given but glycosuria has been permitted because of the recurrence of symptoms suggestive of hypoglycemia.

Pathology. The following summary of findings in another case found at necropsy on January 1, 1933, was obtained from the records of the Department of Pathology of Northwestern University, and is typical of hemochromatosis with decompensated cirrhosis and hemorrhage from an esophageal varix:

A white male about 65 years of age. Marked ascites (6000 cc.). The right lobe of the liver was of normal size, with a fine, granular appearance suggesting "hob-nails." The left lobe was atrophic; on cut section numerous areas of dark brown tissue were found surrounded by fibrous tissue. The spleen showed marked capsular thickening and was adherent to the diaphragm; the trabeculae were thickened. The pancreas was dark brown in color, sclerotic on section. The abdominal vessels were greatly distended. The esophagus showed varices in the lower portion; erosion, marked by fresh blood clot, had occurred at a point near the cardiac orifice. The stomach and the entire bowel were filled with blood. Cut sections of the liver and pancreas treated with hydrochloric acid and potassium ferricyanid showed the remarkable blue staining characteristic of hemochromatosis. Microscopic study of similarly stained sections showed marked deposits of hemosiderin in the liver, pancreas, and retroperitoneal glands; smaller amounts were

found in the heart muscle, kidney, suprarenal and thyroid glands.

The pathology of hemochromatosis has been carefully described by various authors. Pigment deposit is most pronounced in the liver and surrounding structures, as the pancreas and retroperitoneal glands. When the parenchymatous cells of the liver are filled with pigment beyond a certain degree they undergo focal necrosis; regeneration occurs and the new cells in time become pigmented; relative increase in stroma and coalescence results in sclerosis. Similar changes occur in the pancreas. Pigment is deposited not only in the cells of the liver, pancreas and secreting glands (as the thyroid and suprarenals) but also in the interstitial tissue. In addition, the heart muscle, intestinal wall, spleen, skin and kidneys may contain pigment. Destruction of the cortex of the adrenals may lead to an increase of normal pigment in the skin and other tissues.

It is generally believed that two varieties of pigment are present, *hemosiderin* containing iron and giving a blue reaction with dilute hydrochloric acid and potassium ferricyanid, and *hemofuscin* containing no iron. According to Muir and Dunn² some of the pigment that is left unstained or turned a light green with cold acid gives a blue reaction when hot acid is used. Hemofuscin has thus been considered a heme pigment containing iron in a state of combination different from that of hemosiderin. Mallory³ believes it to be a distinct intermediate product between hemoglobin and hemosiderin. Rosenthal,⁴ on the other hand, believes that hemofuscin is more likely a product of cell irritation caused by the toxin responsible for hemochromatosis.

Liver cirrhosis has been described in all genuine cases of hemochromatosis; it is of the multilobular or portal type. The organ is often enlarged. Ascites may be present. Primary carcinoma has been reported in 9 per cent. of 165 cases.⁴ The spleen varies in size and pigment content. The pancreas usually shows a great increase in fibrous tissue with large amounts of pigment in the parenchymatous cells, connective tissue, and around the blood vessels.

Etiology and Pathogenesis. No single definite cause has been proved. Most cases have occurred in males at or after middle age; only

a few cases have been reported in females. An etiologic role has been ascribed to various poisons, notably copper. Certain cases have had industrial contact with copper. Mallory,³ described pigment deposit and cirrhosis in rabbits fed with acetate of copper, but other authors found an equal deposit with sodium acetate and with an exclusive diet of carrots and failed to produce cirrhosis with copper salts.⁵ It is difficult to evaluate the effect of copper since many foods contain this metal and since the liver normally contains amounts that are extremely variable. Apparently alcohol, copper, zinc, and other unknown toxic agents and probably bacteria and their products may play a part.

Whatever the cause, the result is an accumulation in the body of enormous quantities of iron pigment which must ultimately be derived from food. Under normal conditions the body contains less than 5 gm. of iron of which more than half is present in the hemoglobin of the blood. In hemochromatosis the total iron has been estimated as high as 40 gm. and the liver may contain as much as 30 gm. or one hundred times the usual amount.² When it is considered that the average diet contains about 15 mgs. of iron daily it is evident that with complete iron retention it would require more than five years for the liver to accumulate as much as 30 gm. A negative iron balance (partial retention) which is probably present would require an even longer period of time. Complete retention has been reported in one case observed over a very short period of time. Pigment deposit occurs in pernicious anemia but is much less extensive and diffuse than in hemochromatosis; it has been produced experimentally by repeated injections of blood over long periods of time. In hemochromatosis there is, however, no evidence of increased hemolysis or of severe anemia.

To explain the extraordinary retention of iron in hemochromatosis, Muir and Dunn assumed an unusual affinity for iron on the part of cells of the various organs; they believed that the iron became fixed in the protoplasm first as a soluble form and later as granular hemosiderin. The hypothesis advanced by Rosenthal⁴ takes into account recent advances in our knowledge of iron metabolism. Thus it has been found that normally ferrous iron is absorbed in the stomach and duodenum, oxidized

in the blood to ferric iron, and reduced in the liver to ferrous iron where it enters into the formation of hemoglobin or is excreted. The iron derived from hemoglobin and from tissue catabolism is stored in the spleen and is excreted chiefly by the intestine and to a slight extent by the kidneys. Injected iron, on the other hand, is chiefly taken up by the reticulo-endothelial cells, especially the Kupffer cells of the liver. In hemochromatosis the central cells of the liver lobule contain iron and the Kupffer cells apparently do not take up the pigment until saturation or destruction of the parenchymatous cells occurs. Accordingly, it is assumed that in hemochromatosis the underlying defect is the inability of the hepatic cells to reduce ferric iron to ferrous iron which is the only form in which iron can be utilized in the body. It is assumed, moreover, that the chemical or bacterial toxins or bacteria themselves which produce liver cell damage cause injury to cells of the other organs concerned in iron metabolism, and irritate still other cells that form hemofuscin, believed to be a product of degeneration.

Clinical Findings. It seems evident that a case of hemochromatosis that can be recognized clinically represents an extremely chronic process variously estimated at 5 to 10 years or longer. Cirrhosis, usually with enlargement of the liver, is the first lesion that might be detected clinically but the early diagnosis of cirrhosis is notoriously difficult. Pigmentation of the skin is apt to appear next; biopsy then usually reveals brown granules some of which may give the diagnostic Prussian blue reaction. Diabetic glycosuria completes the triad of symptoms but this is a late manifestation. If pigmentation of the skin or diabetes are lacking the diagnosis is usually made at necropsy. Once established the diabetes tends to become progressively more severe.

Since the type of cirrhosis produced is of the portal variety decompensation (ascites) is common provided the patient lives long enough; hematemesis may occur and prove fatal. Jaundice is rare but may occur late in the disease. Purpuric lesions have been described. The patient rarely lives for more than two or three years after the disease has been diagnosed. Death may occur from intercurrent disease, from complications of cirrhosis (hematemesis, primary carcinoma of the liver, terminal

acute necrosis), or from diabetic acidosis.

Of interest is the frequency of insulin shock in cases of hemochromatosis. Reactions are apt to appear suddenly at relatively high blood sugar levels. This tendency, observed by various authors,⁶ is ascribed to a deficient glycogen store in the damaged hepatic cells.

SUMMARY

A case of hemochromatosis and cirrhosis with diabetes is described in which loss of liver function is manifested by hypoglycemia after small amounts of insulin. Necropsy findings of another case of hemochromatosis with decompensated cirrhosis and terminal hematemeses are briefly reviewed.

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DISCUSSION

Dr. Howard L. Alt, *Chicago*: One of the most remarkable things about this disease is the tremendous amount of iron deposited in the body. It might be thought of as a hyperferrism as opposed to hypoferrism, or an iron deficiency.

It would be valuable to make further studies on the iron metabolism in this type of case. Garod observed complete retention of iron, whereas Howard and Stevens observed a decreased excretion of iron in cases of hemochromatosis.

The role of copper in producing hemochromatosis has not yet been established. Recent observers have been able to produce cirrhosis and pigmentation with excessive doses of copper. The copper in the liver is increased in both cirrhosis and hemachromatosis. Whether the increased copper content is primary or secondary cannot be said.

Recently, Dr. Cleveland White and I have seen a young girl of 21 who was treated for mild anemia with iron ammonium citrate, 3 grams, and copper sulphate, 15 mg., daily. About two weeks after treatment was begun, she developed numerous brownish elevated papules on the trunk and extremities varying in size from a pin point to a small pea. Several recent black pigmented naevi also appeared on the neck. Until more is known about the possible harmful effects of copper, it should be used with caution for therapeutic purposes.

AN INFORMAL STUDY OF "THE COSTS OF MEDICAL CARE,"—OF THE "MAJORITY REPORT OF THE COMMITTEE," — TOGETHER WITH SUNDRY OTHER MATTERS OF ASSOCIATED INTEREST*

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It was but last Tuesday, when our Colleague, Dr. Walter Wilhelmj of East Saint Louis, pressing upon me the courteous invitation to address you, on this occasion, upon "The Costs of Medical Care,"—and coincidentally ruthlessly and autocratically trampled upon my disclaimers in favor of someone better versed in the multifarious details of the work of "The Committee on the Costs of Medical Care," that has but recently completed its five year monumental task, and digested its conclusions in its Report, "Medical Care for the American People." It was, however, only when he granted me the greatest liberty in discussion,—in particular absolving me from a microscopic study of a mass of details, and indulging my suggestion for a somewhat informal consideration of broad underlying principles, and of economic and humanitarian matters of widespread and fundamental importance,—that I found it at all possible to yield to his request.

In consonance with the foregoing, the title of this study was chosen, and your cooperative consideration, for a brief period, is invited to this admittedly perplexing and complicated, but equally obviously, highly important problem of undoubted significance to the citizens of these United States.

The Committee on the Costs of Medical Care, —Headquarters, Washington, D. C.,—was formed in February, 1928,—it has functioned under grants of funds and loan of personnel from eight foundations, and from several individual contributors,—it was "Organized to study the economic aspects of the prevention and care of sickness, including the adequacy, availability, and compensation of the persons and agencies concerned." As heretofore stated, it rendered its final report but recently, which took form as a majority report and also as a minority report. As a matter of fact, there have been submitted two minority reports;—but in-

*By invitation, an Address before The Washington County Medical Society, at Nashville, Illinois, March 10, 1933.

asmuch as the second of these is essentially harmonious with, and in no basic sense repugnant to the first minority report,—in the interest of simplification, and for the present purpose, the two will be considered as the minority report. The committee has, during this five year period, published some thirty monographs, fascicles, and abstracts,—its Chairman was Dr. Ray Lyman Wilbur, Ex-Secretary of the Interior, also President of Leland Stanford University on leave of absence.

In passing, it may be noted that this is not the first time that an extended medical survey has been made;—notably "The Medical Education and Medical College Survey," early in the 1900's, by The Carnegie Foundation, under Flexner;—this work was taken up by a Committee of the American Medical Association under Bevan, which wrought effectively in purging our medical schools, and in establishing medical education on a sounder, more constructive, and more productive basis;—and yet again, the careful and extended analytic study by The American College of Surgeons, in 1918, of the Hospitals of the United States and of Canada,—which has led to the standardization of hospitals on the basis of the "Minimum Standard," as laid down by The College.

Though extended and formal "Surveys" are of but somewhat recent occurrence, medicine has not resented such, but open-mindedly has considered such, and whenever indicated has freely used such, both constructively and productively.

This survey of "The Committee on the Costs of Medical Care" is somewhat different from the foregoing factual surveys in that a considerable proportion of the personnel were non-medical in origin, devoid of the medical mind, traditions, ethics, and practical experience;—furthermore, the thought seems not without justification that apparently it was definitely presupposed by the committee, or at least by certain elements thereof, that there was "something" atrociously wrong, if not actually "rotten in the State of Denmark," and that medicine and its practitioners constituted the major, if not actually the sole, etiologic factor. Unavoidably, therefore, the conclusions of the committee have been quite unable to divest themselves from the widespread dispassionate interpretation of "special pleading."

The report of the committee, more specifically the majority report, has stimulated a very considerable measure of discussion, and a very considerable measure of condemnatory criticism. It is of substantial interest that some of the most severe condemnations of the report, and some of the most laudatory comments upon medicine and upon its practitioners, have come from purely lay sources, notably from analytic editorials in standard publications throughout the country.

During the five years of the committee's life and investigations, medicine, as a whole, has remained silent thus following the policy of "watchful waiting," continuing, the while, its agelong task of caring for the sick and wounded of the commonwealth, whether high or low, whether rich or poor,—and incidentally it may be added, under the steadily augmenting economic strain and pressure, engendered by these past, and these present, troublous days;—since the appearance of the two reports there have been noted quite a few pronounced repercussions from various medical societies;—to a lesser extent also from individuals. So far as known, the present evaluation by medicine as a whole, has been largely and strongly against the majority, and largely in favor of the minority report. In view of the fact that the majority report is drastically condemnatory of the existing order of things,—and drastically disharmonious with both the best traditions, and with the current concept and practice of medicine,—and drastically positive in the type of ways and means submitted for their alleged betterment,—it would appear that medicine, as a whole, has exhibited admirable restraint and poise in the crisis that has been gratuitously precipitated upon it by its auto-elect critics, and under the charges, more or less frankly made and widely exploited by up-to-date publicity methods,—of incompetency, of nonadaptability, of progressive obsolescence, of inadequacy of service, coordinated with the imposition of excessive professional fees. If, as has been charitably noted *supra*, such charges have been more or less frankly made in the majority report, by no permissible charitable restraint may such verbiage be employed regarding the public utterances, duly exploited in the press, of sundry members of the majority group, and of their admirers, who have assumed

the privilege of employing a terminology, and of following destructive methods, remarkable alike for their frankness, their crudity, their inaccuracy.

The question may very properly be raised, has there been any abnormal increase of professional fees,—any demonstrable indifference by the profession to the needs of either the individual or of the community at large,—any demonstrable incompetency on the part of the profession as a whole, or by any substantial proportion of the profession,—any demonstrable increment of either disease or of trauma that might be fairly attributable to professional indifference, incompetency, nonadaptability, or neglect;—say within the last 100, the last 50, the last 25, or even the last 10 years. The obvious answer to all the foregoing queries is *no*.

Again the question may be raised, do you consider the existing order of things ideal,—or perfect,—or wholly satisfactory,—or incapable of improvement. The obvious answer is again *no*. The committee might well then question, if you admit these things, why do you object to the work of the committee, and why protest against its conclusions and recommendations. The complete answer to this question might well require a monograph in itself,—but a few of the many points at variance will be touched upon in what follows.

The existing order of things in our Country is, to a greater or less extent, in parallel with the existing order throughout the World;—the difficulties, inconveniences, and hardships that we have experienced, and even now continue to experience, have been far surpassed in many instances among other Nations, indeed among most Nations. The chaos of today, and of past days,—political, economic, governmental, financial, industrial,—“confusion worse confounded,”—is not peculiar to, nor specifically focalized in these United States, nor would it be so severe as it has been, and is, with us, had we not, in our greed of ruthless acquisition, indulged in a prolonged orgy of speculative madness. Riotously the pendulum swung to the height of its arc,—it has now fallen;—thunderously the tidal wave roared to dizzying heights,—it has now ebbed. The results are not only strictly in harmony with the law of action and

reaction, but also strictly in harmony with prior historic experience.

Surely it is unnecessary to mention to the colleagues that the etiologic factors that have developed the World status of these days are numerous, varied, complex, and intercorrelated to an astounding degree;—by virtue of its traditional policy of noninterference in the affairs of other Nations in particular, and of World affairs in general, the United States has hitherto been measurably unaffected by many circumstances that have had great weight elsewhere;—but during and subsequent to the World War, the United States quite unpremeditatedly and quite unvolitionally, and quite disharmonious with its traditions and both its intrinsic and extrinsic governmental policies, has been embroiled and entangled in World affairs to an hitherto unexperienced degree. These entanglements have proved alike troublesome, burdensome, and costly. Neither available time, nor the present occasion, warrants adequate discussion of this highly complicated problem. Suffice it, for the present, to mention that in addition to the complications, handicaps, and hazards, thrust upon the United States by its present status in World affairs, it has also superimposed upon itself certain additional complications, handicaps, and hazards, that may fairly be rated as peculiarly and specifically its own. Among these,—and disregarding international obligations, and the defaulting Nations of Europe,—may be mentioned our financial, speculative, and economic orgies of recent years, together with the accelerated tempo of living, and the multiplication of daily luxuries, a very considerable proportion of which have been procured upon the essentially ethical and economically unsound basis of the partial payments policy.

Coincidentally with the foregoing there has been manifested a ruthless onslaught upon, and a widespread abandonment of, ethical standards that have long since demonstrated their sterling worth,—with the result that such words as honor, integrity, uprightness, loyalty, fealty, righteousness, sincerity, and truth, have practically disappeared from the current usage of the people, and are practically unknown to and uncomprehended by the youth of today. Never before in the history of the United States, and

quite probably never before in the history of the World (save in the decadence of the great Assyrian, Babylonian, Medo-Persian, Egyptian, Grecian and Roman Powers) has money "talked" so strenuously, so vociferously, so blatantly, so overwhelmingly, as it has in these United States during the post War period. And in these matters also, the rioting pendulum has fallen, the thundering tidal wave has ebbed;—and the thoughtful minded have had no difficulty in perceiving the essential unsoundness of gross materialism, and that lawlessness, whether in the physical, mental, or spiritual plane, will inevitably develop widespread destruction.

As has been thus hastily outlined, the economic strain and stress within the United States has been substantially accentuated by an undue importance attached to money, an undue laxity in the acquisition of, and the manipulation of money,—and yet by a strange perversity the majority report of the committee counsels an abandonment of ancient, honored, tested standards, and traditions of the medical profession, disregards the worldwide demonstration of the inadequacy of materialism as a motivating policy, and counsels as substitute ways and means, plans and policies, largely devoid of ethical uprightness, and by contrast largely tinctured with the materialistic, not to say ethical, debasement of frankly commercial concepts, standards, and policies.

If there be any one thing that automatically tends to arouse suspicion in the mind of the community of today, it is the huge corporation, and the impersonal ruthlessness that so frequently characterizes, and has characterized, its corporate activities;—and yet we are now peremptorily counseled to abandon the historic medical viewpoint, the lofty traditional professional standards, the altruistic humanitarianism,—and to substitute therefor mass production, and the ways and means, the standards and the policies of the shop, of the factory, of the highly feminized department store, of "Big Business" in its highly mechanized form, as of today.

Socialized activities, whether individual, municipal, or commonwealth, have, in a vast number of instances, demonstrated the sand foundation upon which they rest, yet we are now urged to socialize medicine;—the governments of the World have exhibited phenomenal individual and collective spinelessness and inepti-

tude in major crises, and yet we are now urged to submit medicine, and the multifarious and vitally intimate contacts of medicine with humanity, to the control of an already superbureaucratized government. We are now patronizingly required to believe that one of the most ancient, one of the most honorable, and assuredly the supreme life saving profession, is hopelessly archaic, is fundamentally unsound and, in its customary practical outworkings, is not only disharmonious with the tempo of these days, but also myopically selfish, greedy, and grasping,—demonstrably inadequate in furnishing competent medical and surgical service to the community as a whole, of which it is but a factor, and in which it is itself open to grave suspicion.

As heretofore suggested, the conclusions of The Committee on the Costs of Medical Care finally took form in the majority report, and in the minority report. The very fact that there was an extended analytic minority report argues a substantial difference of opinion and judgment by the minority group from the conclusions and the recommendations submitted by the majority. Yet the minority report was by no means wholly condemnatory;—for it found reason to approve, either in whole or in part, the majority findings regarding the strengthening of public health services,—of certain educational alterations and improvements,—of the supervision and coordination of medical services,—together with methods of training specialists, and methods of controlling specialism.

The minority took definite issue with the majority on the advisability of superorganization, of superorganizational methods and technique and, in general, that superorganization itself, and in its multifarious outworkings and activities, is of itself essentially a catholicon for the protean ills, either real or alleged, as noted by the majority group.

The minority warns against evils that quite certainly will be found to arise from further multiplication of contract practice, from group practice, from pay clinics, and from arbitrarily formed groups with group payments for professional services, as sponsored by the majority;—the minority also fails to find that the outworkings of these various agencies and methods, as of today, warrant their endorsement as satisfactory agencies in betterment.

While the majority report scourges the pro-

fession for certain intrinsic inadequacies, again either real or alleged, for its nonsupply of complete medical and surgical care to all sections of the commonwealth, and for its sluggishness and indifference in readapting and readjusting itself to the current tempo of these tumultuous days;—it also holds forth the allure of certain financial benefits that will supposedly accrue to the practitioner if, and when, a socialized medicine on a superorganizational basis is established;—the certainty of income, the diminished psychic wear and tear incident to maintenance of solvency in the light of questionable collections, the ready access to abundant *matériel* and facilities,—the diminished competitive strain;—and presumably as a result of all these, a larger measure of available time and opportunity for mental and physical recreation, and hence the increased opportunity for the indulgence in those things that make the strongest appeal to his individual entity.

It may not appear on the surface, nor may it readily be perceived by the merely superficial observer, but the fact remains that such propaganda while pleasingly plausible and, in truth, holding forth many worth while things, yet is essentially grossly materialistic in character, frankly "Big Business" in scope, and this egocentric nonaltruistic lure is that peculiarly appropriate for the intelligence and ethical levels of the conventional, pragmatic, aggressive, business man of today, and is in no sense the proper pabulum for, nor the appropriate appeal to, those motivated by the lofty ethical principles and standards traditional with medicine, and routinely adopted by and practiced by high class members of the profession of medicine.

The thought is subtly conveyed, from time to time, by the majority report, and frankly accentuated by its proponents, that every individual of the community, at all times, is entitled by right to the best medical and surgical care, supervision, and environment;—and yet further that if, and when, an individual or a local community fails to furnish itself with these, it becomes the duty of the commonwealth, either through governmental agencies, or under supervision or control of government, or through both, to furnish such service. It is indeed remarkable how plausible and how persuasively convincing such doctrines and such enunciations sound, when strongly urged by their proponents;

—and how altruistic, how philanthropic, and how humanitarian, such proponents constantly appear to themselves, and collaterally to all those incapable of independent or of cogent reasoning. For mark you,—air, food, water, heat, light, seasonal clothing, dwelling quarters, and sundry other important basic needs, in each and every instance of the best, might with equal force be allocated as a right for every individual, and the burden of final responsibility be thrust upon the shoulders of the commonwealth.

Disregarding the obvious high impracticability of such visionary dreamings of the ideologues, together with the inevitable fostering of widespread unrest, discontent, and covetousness, as a result of their unrestricted promulgation and advocacy,—we are confronted with the fact that this proposed radical departure from the existing order will substitute therefor a supermechanized and an ultrasocialized civilization that will strongly stimulate the ethical pauperization of the economic poor, and in general of the lower strata,—by robbing them of the proper, and wholesome, and desirable stimulus of personal endeavor, of the joy of achievement against odds and competition, of the freedom of the initiative, of the noble pride of the lawful victor. Under this proposed mechanized, bureaucratized, and socialized status, the best and most cherished American traditions and practices will be ruthlessly scrapped and the sturdy American freeman will rapidly become but an economic parasite, and ultimately but an economic and a psychic slave.

Upon this highly exigent problem,—that has been thus arbitrarily developed by the majority, and by them incorporated in the majority report,—the thoughtful comment of Schwitalla, himself a member of the minority group, in a recent address before The Saint Louis Medical Society, is of very considerable interest;—it was, in essence, an earnest protest against developing an ultrasocialized civilization by this proposed manoeuvre that would inevitably lead to a curtailment of the practical outworking of personal consideration, of personal kindness, and of personal philanthropy,—with the yet further sequent repercussion of an unquestionable extensive impoverishment of cultural and spiritual practices, and standards, and assets.

It has been noted that there has been no demonstrable evidence submitted that professional

fees are currently or customarily unreasonably high in proportion to the value and the importance of service rendered, nor has it been shown that the practitioner has been, or is, unduly importunate or unduly rigorous in his efforts at collection. As a matter of fact, demonstrable evidence that the reverse of each of these obtains is both historically and currently available in overwhelming measure. It is admitted that hospitalization charges have increased and that, with the exception of the extremely poor and of the wealthy, hardship is often experienced by the substantial, sturdy, financial middle class. The causes for this undoubted increase in hospital charges are readily perceived to be at least twofold;—first, in order to function acceptably, and in accord with the cumulative technical knowledge and experience of today, both medicine and surgery require laboratories, laboratory facilities, dietary facilities, and properly equipped operating rooms, and personnel for each of the foregoing, to an extent not heretofore required;—but second, and by contrast, the demand for increased and extended nursing service,—for individualized nursing attendance,—for menus in parallel with those furnished by first class hotels,—for private rooms,—for hospitals and hospital equipment and environment needlessly elaborate and needlessly expensive,—all such matters are legitimately chargeable to the egocentric demands of a very considerable proportion of the current hospital clientele, in their ever present and persistent efforts to outdo “the Joneses.” The speaker holds no grievance against those that desire, that can afford, and that are willing to pay for, special or even for luxurious hospital services, equipment, and environment;—suitable hospitals may very properly be created for, and be maintained for such as they. But the profession of medicine is derelict in duty to the community as a whole, and to the fine, sturdy, responsible, upstanding middle class, in particular, if ever and whenever it yields to the whimsical egocentric demands for needless luxury, by the numerous aggressive rivals of “the Joneses.” It should be the consistent policy of the profession to recognize that hospitals are essentially places for the adequate study and care of the sick and wounded, that every needful facility, and every needful comfort, should be provided to attain satisfactory terminal results;—it should also

oppose all needlessly elaborate, needlessly expensive, needlessly luxurious hospitals, the needless and the routine employment of special nurses, the insistent sybaritic demands for needlessly elaborate and needlessly expensive menus,—in short, it should both wisely, and constructively, and actually,—in the vital interest of the community itself,—definitely prescribe, delimit, and control, all hospitals, all hospital plans, policies, and agenda. Needful hospital expenditures for all needful professional activities, and for all reasonable patient comfort, are to be rated as an unavoidable constant, all needless luxuries, and all elaborate nonessentials, equipment, and expenditures, should be rigorously and constantly discountenanced;—the responsibility for this far reaching constructive policy, in the interest of the community, very properly and ineluctably rests upon the shoulders of the profession of Medicine.

This question of heavy current hospital charges, is but one of a very considerable number of actual, or potential, charges or expenses legitimately to be grouped under the general phrasing the “Costs of Medical Care.” That the costs of medical care may be a very substantial item to some individuals, to some families, to some communities, is beyond peradventure;—the why and the wherefore thereof is a very considerable subject in itself, and obviously is beyond either the time or the opportunity available on the present occasion;—for there is involved therein the choice of one’s ancestry, the sturdiness of one’s familial inheritance, the character and wholesomeness of one’s environment, the character and wholesomeness of one’s daily vocation or avocation, the availability or nonavailability of skilled medical and surgical counsel and care, the indulgence or non-indulgence in autodiagnosis and in autotreatment, the use or nonuse of medical nostrums, the employment of and the activities of the steadily spawning cults,—and last, but by no means least, one’s intelligence quotient.

Disregarding all these as frankly obvious, but, for our present purpose, regrettably ancillary matters, we are confronted with the forthcoming fact that the average individual, and the average family, under ordinary circumstances, to say nothing of extraordinary or emergency occasions, may reasonably and properly anticipate the more or less occasional need

for medical or surgical care, in order to grapple with the more or less occasional medical or surgical problem that undoubtedly will confront him. In the light of the foregoing, we are led to the conclusion that costs for medical care should be rated by the average individual, and by the average family, as an economic constant. As such, if he fails to make suitable provision therefor, he is not only derelict in duty to himself, derelict to his family, but also coincidentally derelict to his community. He should be stimulated and instructed, both by word and by example, that an adequate procedure of provision is an essentially sound economic procedure. There is found no reason why suitable and adequate preprovision to meet this economic need should not be fully accomplished either by an appropriate savings fund, or by appropriate insurance. If the latter,—by preference and in consonance with the sound American sanction of individualism, such health-economic insurance should be individual, or at most familial, rather than group or community insurance,—also it should be voluntary, rather than compulsory. Such insurance should be purchased and maintained for the sole purpose of meeting all expenses commonly connected with illness or injury;—it should not carry with it any obligation to engage any specified physician or physicians, nor any obligation to enter any specified hospital or hospitals. The traditional individualism of the American freeman must be fostered and yet further developed;—in no sense, and at no time, should it be either throttled or curtailed.

It is a matter of ready observation that a very marked decadence of individual thrift is widely in evidence, American expenditures for personal luxuries and indulgences total astounding figures. The average American, indeed a very considerable majority of Americans, are constantly stimulated, cajoled, and seduced into expenditures, often wholly and obviously superfluous, on the patently specious partial payments plan. If but a fraction of the needless expenditures of the average American was routinely diverted to, and routinely accumulated in, a fund for the care of himself and his family in the hour of sickness or of injury, the somewhat artificially created, and the obviously hysterically fomented problem of "the costs of medical care" would

instantly cease to be more than a current matter of minor importance.

The majority, in its wisdom, incorporated in its report the following;—"fifty per cent of the families in the United States have incomes of less than \$2,000, which means that even less-than-average charges for medical service, therefore, are more than many of our families can bear."

It is assumed that "incomes" (as thus employed) refer to annual incomes,—but it is impossible to determine what amount was in the mind of the majority, for either \$1 or \$1,999, or any intermediate amount, would be "less than \$2,000." For the present study,—an annual income of \$2,000 or less, will probably sufficiently stabilize this loose notation of the majority. It is amazingly illuminative that any group of thoughtful Americans would be willing unreservedly to sponsor the statement as quoted;—it is even more amazing that such a statement has not been peremptorily and widely challenged long ere this. Much indeed might be recorded in rebuttal, but if the majority group will take the trouble to study the available federal statistics, it will be found that the \$2,000, or less, per annum man, or family, quite regularly expends his, or their, full quota for such needless luxuries as candy, cosmetics, tobacco, "shows," radio, cars, etc. If any doubt yet lingers, they may consult the nearest furniture, piano, radio, or motor car dealer, and ask them would they, or would they not, take on John Smith, who has an undoubted annual income of \$1,500 to 2,000, and sell him, of their goods, on the partial payments plan.

It is beyond peradventure that a large percentage of Americans,—and this includes those whose annual incomes far exceed the "less than \$2,000" of the majority,—and it also assuredly includes municipalities, states, and corporations,—have been recklessly living far beyond their means, and their probably available assets. It must be clearly understood that this widespread thriftlessness, and this constant urge to expend for needless luxuries in the mad effort to outdo "the Joneses,"—rather than to make thoughtful preprovision for the normal expenditures and normal necessities of living,—has gone far toward creating and aggravating the existing order of things, of which the "costs

for medical care" is but a component factor of undoubted minor significance. The committee as a whole, but the majority in particular, has seemed astonishingly oblivious to sundry demonstrable facts, such as these, in what would appear to have been an intensive effort to confirm and substantiate preconceived agenda.

It cannot too strongly be stressed that the general rule should be that the American freeman must not only retain, but also further develop, his individualism and his exercise of the initiative, that as a freeman he must provide ways and means for the customary expenses of living, must maintain his honorable place in the community, that he is not, nor shall he be made, a supine weakling dependent upon the mechanized rulings of a bureaucratized, ultrasocialized government, that thriftily and thoughtfully he must make adequate preprovision for himself and for his family.

Quite obviously the foregoing does not include, in any sense, the hopelessly incompetent, or the hopelessly inadequate mental, physical, financial, or economic citizen.

Furthermore it is stressed that the sturdy independence and the rugged individualism of the worthwhile American freeman are to be encouraged and to be stimulated both by the precept and by the example of those of wider culture, of those of more matured judgment;—and that, *per contra*, at no time, and in no fashion, should his independence, his economic integrity, or his individualism, as a sturdy member of the commonwealth, be debased or be prostituted by proletarianized methods and means so frankly thus sponsored by the majority, and noted by them in the agenda incorporated in the majority report.

If the existing order of things is not perfect and undoubtedly it is not, nor as a matter of fact ever will be,—the burden of responsibility assuredly rests not specifically on medicine, nor on the loyal and ethical members of the Ancient Craft. That medicine, more particularly the practitioners thereof, sustain a measure of responsibility is undoubted,—but it is rather chargeable to us as citizens of the commonwealth, than as craft members. It is needless to remind you that in no sense, and at no time, must we regard either lightly or neglectfully our citizen responsibility.

The majority report attacks upon medicine,

whether obvious or veiled, are not grounded upon demonstrable facts, they flagrantly disregard the inherent soundness and sanity of medicine, its traditional wholesomeness, its basic self-forgetfulness, its underlying spirit of self-sacrifice, its constant willingness to serve in the hour of need, its customary freedom from crass commercialism and from frank materialism, its lofty ethical standards and practices;—all these date from ancient days, and have but ripened and enriched with the passing centuries. To a forthstanding degree, the very fact of the demonstrable existence of these things, and in the light of historic demonstration of its essential integrity, its unvarying dependability under stress, and its ever vital maturing and fructification with the passing centuries,—to a forthstanding degree Medicine has demonstrated its autodeterminative power and its high intrinsic capability not only to handle its own affairs, but also competently and wisely to counsel, and to serve, and to lead the commonwealth in all matters that lie within its legitimate horizon.

The ethical Principles and Standards of Medicine have been determined by Medicine itself,—if they be rigid, they are rigid only to, and upon, the sons of Hippocrates and Esculapius;—the customary functionations of medicine in its daily contacts with, and its manifold duties concerning, Humanity, have routinely made current adaptation in consonance with the time, the place, and the occasion. If the experiences of the past be properly rated as acceptable criteria for evaluating the probabilities of the future, it may be confidently affirmed that there is found no valid reason to question that medicine will continue to function both effectively and wisely, not only in these passing days, but also in those that will unfold in the crepuscular reaches that the future yet holds in store,—there is found no adequate reason to challenge either the power, or the intelligent willingness, of medicine to meet individual or community needs if, and when, they arise;—there is found no adequate reason why medicine should subserviently yield itself to the arbitrary mandates or to the passing whims, of lay minds activating within fields of which they know but little or nothing, and utterly indifferent to, if not actually utterly ignorant of, the lofty ethical standards, and practices, and policies, of this the noblest of ancient and liberal professions.

Not in the slightest as a Pharisee,—smugly content with himself, and with the things of the day as they are,—do I state to you unequivocally that the soundest and the best solution of the protean and complicated medical and surgical problems involved in the maintenance of the welfare of the community, is the solution that will be devised by, be tendered by, be sponsored by, and be concretely exemplified by medicine itself;—nor is there the slightest reason to anticipate that the proposed solution of the diversified problems within this highly specialized field if, and when, devised by minds wholly devoid of medical traditions, training, technique, and tactics, will be found, in any significant regard, comparable thereto.

And it is this profession, together with its lofty ethical standards, and its noble traditions, that is your heritage, and that is my heritage, this day.

At the close of this day, and as the hours of the gloaming draw on apace,—it would appear singularly appropriate if this occasion,—which on the one hand has enabled us to cleanse our minds refreshingly from the malodorous slurs and innuendoes, and from the shallow and myopic pronouncements of an autoelect committee, without the burden of responsibility yet sitting in judgment,—on the other hand should be profitably and fruitfully employed, in a searching evaluation, each for himself, as to his own professional, and as to his own ethical status,—and the faithfulness with which he daily carries on.

Disregard for the present occasion all others, for the nonce disregard all else;—will you not in all sincerity, each for yourself, in the mellowed silence of the Innermost Room, in the radiance of the incandescent crucible of Truth, searchingly scrutinize, critically evaluate, to what extent you individually are a faithful, a rigidly disciplined, a noble exemplar, and a leal Son of Medicine.

3737 Washington Boulevard.

A dear old lady had attended a health lecture, and stayed behind to ask the lecturer a question.

"Did I understand you to say," she asked, "that deep breathing kills microbes?"

"I certainly did say that many microbes are killed by deep breathing," replied the lecturer.

"Then can you tell me, please," she asked, "how one can teach microbes to breathe deeply?"

TUBERCULOSIS AND PREGNANCY*

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There seems to be no universally settled opinion relative to the effect of pregnancy upon the tuberculous process in women, nor is there unanimity of ideas relative to the effect of the tuberculosis upon pregnancy, labor, and the puerperium. It seems to be well established that tuberculosis is occasionally transmitted to the fetus, but this process occurs so rarely that it constitutes a very minor obstetrical and medical problem.

Matthews and Bryant, from a study of the reproductive life of 1,000 graduates of Trudeau, found it possible to analyze 484 cases in some detail. From their investigations, published in 1931, they concluded that "1. pregnancy has a definitely deleterious effect on tuberculous women; 2. the more advanced the tuberculosis, the more deleterious the effect of pregnancy, and 3. the women who took sufficient time before getting pregnant after being 'cured' (three years or more), and who obeyed all rules and regulations after leaving Trudeau, fared better than those who did not."

Reviews in the literature, which have been made by various authors, indicate that the majority of those who are interested in the problems presented by patients with tuberculosis who become pregnant, believe that pregnancy exerts a deleterious effect upon the tuberculous woman. This is well illustrated by the conclusions drawn by Robinson (1931) from an international questionnaire to which two hundred replies were received. His general conclusions, with reference to this point, were that parturition involved a special risk for the tuberculous woman. The patient may show an apparent or, occasionally, a real improvement during pregnancy, but this is rarely, if ever, maintained after delivery. The injurious effect commonly begins in late pregnancy and increases during the puerperium, reaching its maximum when lactation has been established. No type of tuberculosis is immune from this influence; latent infection

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may be activated, quiescent lesions reactivated, and active disease made more active.

The opposite viewpoint is taken by Forssner (1925), in an extensive article. After a consideration of the opinions of various authors, he doubts that we possess sufficient knowledge upon which to base scientific conclusions, and the following is a quotation from his contribution: "The first question is the most fundamental and on it depends the rest. Does pregnancy, as a rule, have a harmful influence on pulmonary tuberculosis and in what cases? The second: Are the children of tuberculous subjects of negligible value or have they some importance in the population? If of value, one should be cautious with regard to abortion; if of negligible value, one should show no hesitation. Finally, the third question is: Does abortion increase the chances of resistance to the tuberculous process in the mother? If not, the operation has no justification or at least it should be practised prophylactically before the pulmonary condition is made worse."

There seems to be unanimity of opinion that pregnancy exercises a harmful influence upon tuberculosis, but Forssner feels that this opinion may be unwarranted. He states: "I do not wish to deny that in certain cases pregnancy seems to cause an aggravation of the pulmonary condition, but I hold that we have not one fact which proves that pregnancy has produced this aggravation, that this aggravation would not have shown itself in any case." He and his collaborators have followed two series of cases in Stockholm for a period of at least one or two years. All are proved cases of tuberculosis. One series was not pregnant during this period of observation and the other group was. He writes: "We have examined 396 cases of pulmonary tuberculosis in which no pregnancy had exercised its influence on the development of their disease. This investigation will show the course of pulmonary tuberculosis during a period of two years in women of the working class in Stockholm, who had not been pregnant either during this time nor in the preceding year."

Of the 396 women, 359 were observed for two years or longer. These are subdivided into Turban's stages, with the following re-

sult: One hundred and forty, or 38%, in the first stage; ninety-five, or 27%, in the second, and one hundred and twenty-four, or 35%, in the third stage. Of those in the first stage, eighty-three, or 59%, were improved or stationary, while thirty-eight, or 27%, showed aggravation, and nineteen, or 14%, died. Fifty-three, or 56%, of those in the second stage were stationary or improved, twenty-nine, or 30%, were aggravated, and thirteen, or 14%, died. The third-stage cases remained stationary or improved thirty-three times, or 27%, became aggravated in thirteen, or 10%, and seventy-eight, or 63%, died.

They collected a series of 341 cases of pregnant women with pulmonary tuberculosis, and of these, 299 were observed for two years following pregnancy. One hundred and fifty-eight, or 52%, were in the first stage; ninety-seven, or 33%, in the second, and forty-four, or 15%, in the third stage.

Of those in the first stage, one hundred and twenty-five, or 79%, were improved or stationary; twenty-three, or 14%, were aggravated, and ten, or 7%, died. The second-stage cases were stationary or improved in sixty-six, or 68%, of the instances; aggravated in twenty-one, or 22%; and died in ten, or 10%. Of the third-stage cases, thirteen, or 30%, were stationary or improved; two, or 5%, were aggravated; and twenty-nine, or 65%, died.

The authors point out that the non-pregnant women presented themselves because they had subjective symptoms, whereas the tuberculosis was discovered in the pregnant women as a part of the routine examination. They tried to eliminate all quiescent cases from their pregnancy series and had 185 cases left, which were observed for two years. Of these, eighty-three, or 45%, were in the first stage and fifty, or 60%, were improved or stationary; twenty-three, or 28%, were aggravated; and ten, or 12%, died. Sixty, or 32%, were in the second stage and twenty-nine, or 48%, continued stationary or improved; twenty-one, or 35%, were aggravated and ten or 17%, died. Forty-three, or 25%, were in the third stage; eleven, or 26%, were improved or stationary; two, or 4%, were aggravated, and twenty-nine, or 70%, died.

Forssner and his collaborators conclude,

from their observations, that "it is not presuming too much to say that these statistics contradict the thesis that pregnancy exercises a detrimental influence on pulmonary tuberculosis, at least in the case of women in the first stage."

"Our statistics, in connection with the second and third stages, undoubtedly show a difference in favor of the women who were not pregnant the year preceding observation of their pulmonary tuberculosis. This difference is so slight that it might be simply the result of chance. It is not possible, however, to deny that it may indicate a harmful influence of pregnancy on advanced cases of tuberculosis."

They feel that proof of the harmful influence of pregnancy upon the tuberculous woman is not yet forthcoming, and that the truth has not yet been established. It has been accepted almost as a truism that pregnancy has a harmful influence upon the tuberculous patient.

Barnes (1930), after studying 410 cases, felt that pregnancy rarely, if ever, had a harmful influence upon the tuberculous patient. He found that 81% of the tuberculous women who became pregnant and were not aborted bore normal children without detriment to themselves.

Hill (1928) compared 349 cases of pulmonary tuberculosis associated with pregnancy, with 160 cases of non-pregnant tuberculous women. He followed these cases for two years and concluded that pregnancy had no appreciable effect upon the tuberculous process.

Jennings, Mariette and Litzenberg (1932) have studied 27 full-term cases and believe that none of their patients with minimal tuberculosis were harmed by pregnancy. The former two authors studied 470 cases, with reference to their pregnancies, and reached the conclusion that pregnancy does not have any marked effect on the progress of the tuberculosis. The evidence is striking that the phenomena are independent of one another.

Questions have been raised relative to the sexual appetite and the fertility of tuberculous patients. Many authors state that there is an increased sexual desire and that they are unusually fruitful. White (1931) thought the probable causes of the former were the

sedentary life, high caloric diet, and slight fever.

Kacprzak (1924) believed that such opinions were based on little scientific data. He studied the matings of 9,855 persons, which resulted in 49,031 pregnancies. Considering the duration of life, he found that there was greater fertility among the tuberculous than the non-tuberculous individuals, no matter whether one or both parents were affected. Matthews and Bryant determined that tuberculous women had more pregnancies than the non-tuberculous, and those with advanced processes were more fertile than the ones with lesser degrees of involvement.

Abortions and premature terminations of pregnancy seem to be more frequent among the tuberculous than in those without this disease. Matthews and Bryant are of this opinion. There is little evidence in the literature relative to this point, and accurate information is lacking concerning the actual number of pregnancies in comparison with the number of unintentional abortions. There is also little evidence that there is an increase in the frequency of premature births.

The fetus may be infected in utero and be born with congenital tuberculosis. There are such cases in the literature. McCord has reported one in which the infant was born alive but died in early infancy. He was able to demonstrate tuberculosis of the placenta. The mother survived the birth of her infant only 12 hours. An autopsy revealed extensive pulmonary and visceral tuberculosis. The infant lived 30 days, and at autopsy extensive tuberculous involvement of the liver and spleen was found. Couvelaire (1929) has reported a case of congenital tuberculosis, found at autopsy, following an antemortem cesarean section upon a woman with a tuberculous meningitis. Levy (1930) has also reported a case of placental transmission to the fetus. Such cases are the exception and not the rule.

Various authors have collected small series of cases. Calmette has advanced the idea of an ultra-virus, and Couvelaire seems to be of the opinion that transplacental transmission of such a virus may be more frequent than is commonly supposed. There is, however, very little in the course of events to make one believe that the fetus is frequently involved in

such a process. Ordinarily, the fetus seems to be normal at term. The danger to the infants is largely from postnatal contact.

Forssner compared two small series of cases observed from one to three or more years after birth. Group 1 consisted of infants who were separated from their mothers. Eighty-two per cent. of these were living and well; 12% died from non-tuberculous causes; 3% were alive and tuberculous, and 3% died from tuberculosis. Group 2 included infants reared by their mothers. Fifty-two per cent. were living and well; 3% were dead from non-tuberculous causes, 25% were living and infected with tuberculosis, and 20% died from tuberculosis. Barnes' statistics show that 81% of his series of pregnant women bore normal infants. Matthews and Bryant reported 579 normal living births among 778 pregnancies.

It appears from these data that over three-fourths of the pregnant tuberculous women may expect to give birth to normal infants. It is essential that infants born to tuberculous mothers should be rigidly protected from a harmful maternal contact. About four-fifths of the infants thus protected survive without any evidence of tuberculous infection. Infants who are exposed to tuberculosis by being cared for and nursed by mothers with an open tuberculosis seem to develop tuberculosis within a few years in approximately one-half of the cases.

Labor seems to proceed very much as in non-tuberculous parturients. There are, of course, individual variations, depending upon the factors usually encountered and also upon the strength of the patient as affected by the disease. For some reason or other there seems to be a tendency to increased blood loss and postpartum hemorrhage, which is stated by Matthews to occur in about 13% of the cases, as against the ordinary incidence of 2%.

The puerperium carries with it definite dangers to the mother, as it is within this period that the results of anesthesia, exhaustion, trauma, blood loss, and possible infection during labor manifest themselves. The establishment of lactation is an added drain upon the mother, and the tuberculous process may become aggravated during this time.

My (Adair) personal experience leads me to believe that, while the pregnancy, labor, and

puerperium may per se have no direct effect upon the tuberculous process, there are, nevertheless, associated and complicating conditions which do add to the risk of the patient. It is my opinion that there are three periods which are especially hazardous to the mother. 1. The first trimester; 2. the immediate puerperium, where any detrimental effects of the labor are apt to appear, and 3. the period of lactation.

While there is more or less sharply divided opinion as to the direct effect of pregnancy upon the tuberculous process, there seems to be unanimity of opinion that it should be avoided by the tuberculous woman until a "cure" has been established for a period of two or three years. The marriage of tuberculous individuals is worthy of discussion. It carries greater danger to the woman than to the man, largely because of the differences in their reproductive lives. A woman should not marry until a two- or three-year cure has been obtained. A man with an open tuberculosis should not marry because of the danger of transmitting the disease to his wife. From an eugenic point of view, it would be preferable if two tuberculous individuals did not marry. The physician cannot control the marriages of men and women who are afflicted with tuberculosis. In fact, his advice is not often sought. He is frequently confronted with the problems of contraception, sterilization, and therapeutic abortion. Contraception is not infallible, even with proper co-operation of both mates. It should be advised for all tuberculous women who are not cured.

Sterilization of non-pregnant and pregnant tuberculous women should be decided largely on the probable future course of the disease, unless there are other complicating factors. If recurrence seems probable or cure is problematical or unlikely and requires very protracted management, sterilization should be done, especially if there is already a family of children.

The general management and treatment of the tuberculous woman who is pregnant does differ materially from that of the one who is not pregnant, in a corresponding stage of the disease. The first thing of importance is the detection and diagnosis of the existence and stage of this disease. Tuberculosis occurs with sufficient frequency in pregnant women to make it necessary for every prospective mother to

have a history and physical examination made, with the idea of finding evidence of tuberculosis, as well as of other disease conditions. Every prospective mother should have such an examination, no matter whether she is under the care of a physician or a midwife. Many women still have either no or inadequate prenatal care.

The termination of pregnancy is a question which commonly arises in the management of pregnant tuberculous women. There are two main questions to answer in reaching a decision on this point. First, does pregnancy, in general, have a detrimental influence upon tuberculosis? Second, in a pregnant tuberculous woman, does a termination of the pregnancy give a better chance of recovery than a continuation of the pregnancy to term? These questions should be decided on the general basis of the duration of the pregnancy and the stage of the disease, at the time a decision must be made. There are individual questions which have to be decided on the basis of complicating factors, which affect the patient, whether they are accidental or incidental to the individual or the pregnancy.

There is little scientific support for the impression that pregnancy per se has a deleterious influence upon tuberculosis. There is much diversity of opinion and, more recently, supporting data seem to indicate that pregnancy has little, if any, effect upon the course of tuberculosis. We need not give this general impression much consideration.

It has been generally thought by the German and other schools of medicine, except the French, that the termination of pregnancy improved the chances of recovery from a tuberculosis. At present there seems to be a trend away from this opinion. It seems to be quite well agreed that nothing is to be gained by a termination of the pregnancy after the early months. Therapeutic abortion, within the first trimester, would seem to be the only period of gestation, except at term, when the termination of the pregnancy would seem to be indicated.

There are differences of opinion as to the frequency with which this procedure should be carried out. Some believe that it should be done as a routine in all active cases. Ingraham (1932) is of the opinion that any pregnant patient with an active pulmonary tuber-

culosis should be treated by termination of the pregnancy in its early stages. Other authors believe that intentional abortion is rarely, if ever, indicated. The stage of the disease seems to make some difference. Most authors appear to agree that it is a useless and, possibly, a harmful procedure in cases with an advanced tuberculosis. There appear to be differences in opinion only with reference to first-stage tuberculosis in early pregnancy.

From the present evidence and trend of opinion, it appears that abortion per se has no favorable influence upon the course of tuberculosis. Therapeutic abortion should not be done as a routine. Is such a termination of pregnancy ever indicated in the treatment of tuberculosis? Forssner (1925) states: "For us the question of induced abortion, except in very rare cases where there are human considerations as well as the tuberculosis itself, is satisfactorily settled. We have shown definitely in our study that a pregnancy continuing until term is no more dangerous for first-stage tuberculous women than for healthy women, and by not interrupting this pregnancy we obtain for the race healthy children just as valuable as other children."

We might conclude that premature termination of pregnancy is not indicated by the existence of uncomplicated pulmonary tuberculosis. Obstetrical complications may arise which necessitate the termination of pregnancy. Incidental complications, such as marked nausea and vomiting, with weight loss, etc., indicate a termination of pregnancy, as the woman is brought below par and her resistance to tuberculosis is reduced. Accidental complications may occur, as pyelitis, heart disease, etc., which increase the hazard to the patient on account of the pregnancy and the tuberculosis as well.

Conditions may arise from the tuberculosis, as Pott's disease or laryngeal tuberculosis, which, in the minds of some, seem to indicate a termination of the pregnancy. Fink reported 75 cases of laryngeal tuberculosis in association with pregnancy, and decided that therapeutic abortion accomplished nothing for the patients.

It is our opinion that therapeutic abortion should be done only in early cases in early

pregnancy, where there are complicating conditions which are a menace to the welfare of the mother. If future pregnancies are considered as a possibility, the uterus should be emptied from below. If subsequent conception is thought to be undesirable the patient should have an abdominal hysterotomy and a resection of the tubes, or possibly a hysterectomy, under local anesthesia.

The pregnancy should be routinely carried through, with strict care of the tuberculous woman, under the most favorable conditions possible.

Labor should not, as a rule, be induced, but allowed to come on naturally. No irritating anesthetic should be used. The patient's strength should be conserved as much as possible, and, if necessary, the second stage should be completed by forceps delivery. The blood loss, the trauma, and chances of infection should be minimized. These provisions are always of major importance, but they are vital in these tuberculosis patients.

Cesarean section, under local anesthesia, has to be considered where there are other indications than the tuberculosis itself. Where sterilization is deemed advisable, it may be wise, in many cases, to combine the section and the sterilization in one operation. This is especially true in some cases in which the exertion of labor might add to the risk of lung complications.

Sterilization, by means of the x-ray, can be advised in some of the older women.

Especially care is required during the puerperium to facilitate recuperation. Lactation should not be permitted, as it increases the hazard for the mother, and where the case is open, there is great danger to the infant who is apt to acquire tuberculosis.

Prolonged subsequent care is necessary, and succeeding pregnancies should be avoided until a two- or three-year cure has been attained. The tuberculous pregnant women require greater and specialized facilities for their care.

Provision should be made for examination and diagnosis in all pregnant women. They need special provisions for their care in either maternity hospitals or tuberculosis institutions, as at present neither the one nor the

other has the proper facilities and personnel to provide the combined attention which these patients require.

CASE REPORTS

Case 1. M. H. Unit No. 73065. X-ray No. 24494. Active pulmonary tuberculosis, pregnancy 4 months, therapeutic abortion. The patient, aged 22, single, gravida I, was admitted to the clinic December 14, 1932, with active pulmonary tuberculosis for 4 years. The disease involved both lungs in the beginning, and she was put on a prolonged rest treatment so that the right lung might clear sufficiently to permit collapse of the left lung, which was cavernous. The sputum was positive frequently. Pneumothorax treatment on the left was started 1½ years ago, with the result that the symptoms diminished greatly, but the disease apparently, according to the M.T.S. dispensary physicians, is still considered active enough to continue collapse at the present time. She was operated on for tonsillectomy in 1925, and thyroidectomy in 1928. There was no family history of tuberculosis.

On physical examination, the patient was found to be fairly well nourished; no adenopathy; chest flat, of fair expansion, hyperresonance and diminished breath sounds throughout the left side. Laboratory findings, blood and urinalysis, negative. No sputum was obtained. The x-ray examination revealed the left lung fairly collapsed. The presence of fibroid-type of tuberculosis was easily recognized in the left upper lung field, and there is a strong suspicion that there is still an unobliterated excavation. The right lung showed fibrous scarring at the right apex, probably not of clinical significance; the middle and lower thirds are clear.

Termination of the pregnancy was advised. It was attempted by medical induction with fractional pituitrin. Dilatation of the cervix and removal of the fetus and placenta under morphine and scopolamine narcosis and ethylene anesthesia were done. The post-operative recovery was uneventful and the patient was discharged on January 7, 1933. The chest condition was unchanged. Follow-up in Out-patient Clinic.

Case 2. Mrs. B. K. K. Unit No. 50189. X-ray No. 18596. Pulmonary tuberculosis far advanced, pregnancy at term. The patient, age 25, Gravida I, Para I, was admitted to the hospital December 19, 1931. She complained of dyspnea and cough. Her last menstrual period was March 15, 1931. There was a history of pulmonary tuberculosis dating back 4½ years; onset with hemoptysis, since then hemoptysis twice. Her periods have been irregular since the original hemoptysis. Since becoming pregnant the symptoms have become aggravated, especially dyspnea. There was no family history of tuberculosis.

On examination the patient was found to be from 24 to 26 weeks' pregnant. The pharynx was reddened and there was dullness of the apices with crepitant rales and roughened heart sounds. X-ray examination revealed a tuberculous involvement throughout the upper halves of both lung fields, with a cavity in the left apex.

A cesarean section with tubal ligation was performed at term on January 22, 1932. The puerperium was afebrile. The patient was in the hospital for 65 days, and

was discharged on February 23, 1932, to a tuberculosis sanatorium.

Case 3. Mrs. N. A. Unit No. 62887. X-ray No. 23350. Unilateral pulmonary tuberculosis on left; tuberculous pleuritis with effusion on left. Pregnancy, 6 months. The patient, age 22, Para I, Gravida III, was admitted to the hospital on October 20, 1932. She gives a history of tuberculosis dating back to 1926, and has been in a sanatorium, being discharged from one recently. An older sister had pulmonary tuberculosis when the patient was a child. She has had pneumothorax treatment and phrenicectomy. X-ray examination revealed a massive collection of fluid in the left pleural cavity, completely collapsing the left lung and displacing the mediastinum to the right.

A laparotrachelotomy and sterilization were done under local anesthesia on February 6, 1933, at term, and a female infant delivered.

Case 4. M. F. Unit No. 11981. X-ray No. 8809. The patient, age 35, Gravida I, was admitted to the hospital on January 27, 1933. A diagnosis was made of pregnancy (2 months), pulmonary tuberculosis and tuberculous spondylitis. Her last menstrual period was November 8, 1932. Two sisters of mother died of tuberculosis and one had tuberculosis in 1926, when the patient complained of cough. The patient complained of productive cough, afternoon fever and hemoptysis on admission. She had influenza and a tonsillectomy some years ago. The present indications are multiple tuberculous lesions of advanced state and tuberculous spondylitis of the 7th, 8th, 9th dorsal and 3rd and 4th lumbar vertebrae. Immediate termination of the pregnancy and sterilization was advised. Hysterotomy and sterilization were performed under local anesthesia, on February 1, 1933.

Case 5. Mrs. B. A. A. No. 5062. The patient, age 28, married eight years, Para I, Gravida III, was admitted to the hospital December 16, 1925, with a diagnosis of pregnancy of approximately six weeks' duration, with pulmonary tuberculosis and pneumothorax. She had been in bed during the past month, has had a good deal of nausea in the last two weeks, and has been vomiting for the past five days. Her menstrual history was normal. She had a full term pregnancy, with a normal labor and puerperium seven years ago. She had a therapeutic abortion performed in a physician's office five years ago when she was in very poor condition, having recently had sinus and septum operations and was very ill in bed for about two weeks afterwards. Three years ago she had a suppurative axillary gland excised and received treatments for cystitis two years ago.

She has had pulmonary tuberculosis and a pneumothorax was done on the right side two years ago. There was a spot in the upper portion of the left lung at the time of the examination. Her family history was negative. Her parents, two brothers, one sister, husband, and seven-year-old child were all well; there was no tuberculosis.

It was deemed advisable to interrupt the pregnancy. A hysterotomy and sterilization by tubal ligation were done under caudal anesthesia with 1 per cent. novocaine. She had a nice convalescence, with a maximum temperature of 100.2, pulse 120, respiration 24, and was discharged in good condition on the fifteenth day. Since

this operation, which was eight years ago, her doctor reports that she has been receiving artificial pneumothorax treatment regularly and her general condition has been excellent. She is very active in carrying on her household duties and engages in a good many social functions; in short, she leads a normal life. Her diseased lung remains well collapsed and there has been no change in the opposite lung.

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THE SURGICAL CONQUEST OF THE ABDOMINAL CAVITY*

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The surgical conquest of the abdominal cavity has been of comparatively recent origin, crude in its beginnings, advancing as one discovery after another has been made. But these discoveries were not always immediately appreciated, and on three well-marked occasions practices of well-known surgeons were subject to the pruning-knife of further clinical experience or research.

The first laparotomy by McDowell in 1809 happily hit upon one correct method of approach. His knowledge of anatomy led him to believe that the ovarian tumor could be easily removed, so he took the risk in *isolated Kentucky*, of its removal and the ligation of its pedicle, and *what a field of surgical endeavor he opened up! He discovered the relative immunity of the female pelvis*. In 10 days, after adhesions had formed, the patient rode 60 miles on horseback to her home.

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*Read before the Staff of Holy Cross Hospital, March 10, 1932.

The course of events between 1860 and 1890 resulted in a race between Pasteurism by Lister and the relative immunity of the female pelvis employed by the gynecologists as to which should be first successful in making laparotomy safe. The gynecologists were first on the ground, and furthermore, had a fertile field of abundant pelvic pathology in which to practice their theories.

Quoting from Kellogg's¹ article regarding the work of Tait, he says,

"The carbolic acid spray by Lister was conscientiously employed by Spenser Wells and his followers, but Tait achieved better results without the spray than others did with it, employing otherwise the same technic."

By slight changes in technic he reduced the "25% mortality of Spenser Wells' first 1,000 cases to 5%" by methods that aided the relatively immune pelvis to isolate itself. The practice had been to exteriorize the tumors through the abdominal incision and allow sloughing; he ligated the pedicle and dropped it back.

Tait had been a student of Darwin's "whom he worshipped," and probably guessed intuitively that the pelvis possessed a certain immunity, for he remarked to Kellogg in 1899,

"I have torn the intestine 30 times yet they got well just the same."

"When Tait began, abdominal surgery was synonymous with ovariectomy. His courage led him to extend it to the gallbladder and other viscera; hence he was the real father of abdominal surgery" (Kellogg).

He treated pelvic tumors "extraperitoneally," and allowed them to slough at first, which rendered his wards in the Crescent comparable to a slaughter-house in odors. Later he employed boric acid for its "drying properties."

Emboldened by this success he progressed rapidly and by 1889 had performed 1,000 successful laparotomies mainly for pelvic tumors, of these 1,000, 116 had been consecutive without a death in the face of 30 consecutive deaths in Edinburgh, some of which were done by his old teachers, Syme and Simpson. Another evidence of his boldness was his invasion of the upper cavity to remove gallstones for the first time in 1876.

So convinced had Tait become of the safety of abdominal section that he wrote in 1881,²

"So satisfied have I been with the results in these cases, that in the next case of peritonitis to which I am called, of whatever sort it be, even puerperal, I shall advise and perform (if allowed) abdominal section, shall cleanse out the cavity and drain it; and if the operation be not deferred until the patient is moribund, I believe this treatment will prove eminently successful."

At that time, so London surgeons said,

"Cases of salpingitis all go to Birmingham."

And again, "Gynecologists are limited to anything they can do in the pelvis through the vagina, but if the pelvis has to be reached through an abdominal incision, then a general surgeon is called upon." (Baldwin).³

Tait was setting a fast pace for the tortoise, Lister was slowly but surely making progress in London. Although Tait was applying a biological principle just as truly as was Lister, it had in it elements which, while easily proved, have never been accurately enunciated, and is, even today not generally known, viz.: *that the abdominal cavity possesses different immunities in its various fossae.*

His practices had in them the element of stealth, of mystery. The nearest modern surgical practice that approached it is in the "stealing away of goiters" by Crile.

The race ended by the Listerians dropping *antisepsis*, and the gynecologists abandoning the *lower method of approach*. Both joined in an *aseptic abdominal laparotomy*.

Almost the only remnant of this controversy today is the preference of gynecologists for the lower operations in cases of marked prolapse, which they feel to be safer, as nature has already partially performed the act of exteriorization, and such cases of prolapse were, perhaps, the source of some of the courage of Tait, Spenser Wells and others of that period.

Intestinal Surgery. The history of intestinal surgery is equally interesting. After attempts to approximate the gut walls with ants' jaws, suturing over goose tracheas, and bringing the lesion in the gut to the parietes, all of which failed, of course, because of infection, Lembert in 1826 found that if the peritoneal surfaces were brought together and held firmly, healing took place. However, infection still occurred all too often. The operation probably succeeded if the balance of drainage was so nicely

adjusted as to allow exuviation of the stitches *inward*. That infection deposited in the cavity during the operation was so slight that it could be absorbed by the peritoneum, or was removed by the drainage was also probable.

Lister,⁴ strangely enough, in 1881, was the first to see an aid in the common household custom of preparing sausage casings. This was something substantial enough to which to anchor stitches. Senn's⁵ bone plates utilized it, but Murphy's button really *discovered the submucosa*. Not until Barbat in 1900 discovered that the button was holding mainly that layer alone did the button fail, but it had left its legacy, the discovery of the submucosa. Surgeons immediately applied their stitches to it.

The mirage of "capillarity" taught by Fenger was cleared up by the Connell suture in 1900.

From Tait's stealthy successes in the lower abdomen arose Murphy's dictum, "in quickly and out quicker." Abdominal surgery was still affected by gynecological fear.

As anesthetist for Murphy's imitators 5 miles away I had the opportunity of witnessing the effect of breaking up limiting adhesions in the "immediate operation" for acute appendicitis, and the cases of intestinal obstruction which followed, causing many deaths.

The Study of Peristalsis Begins. Tait said,

"I am not afraid of germs. They cannot grow without food."

Kellogg adds,

"As late as 1883 restriction of bowel movement for 10 days after operation was practiced. But at that time Tait took a radical departure. Before operation the patient was thoroughly purged with saline laxatives, and starved for 48 hours. After operation the bowels instead of being confined were moved by enema on the second morning."

Thus Tait took another tack in his fight with the Listerians, in that he sought to eliminate bacterial growth by the removal of what he supposed to be the culture media, viz.: depletion of the bowel tissues by catharsis.

Early bowel movement after laparotomy became such a crisis that even today surgeons breathe easier "after the bowels have moved." They are thus assured that they have not caused traumatic ileus, that the infection is

being localized, and that their great friend, peristalsis, is still active. So anxious to relieve the minds of her surgeons in that crisis was a superintendent of nurses in 1902 that she would ask their permission to "massage the bowels to remove the gas" on the second day, and would often obtain it.

This false philosophy of Tait was the source of the practice of giving cathartics at the onset in acute appendicitis, resulting in rupture and spread of infection, causing death in many cases of that day.

Arose Ochsner's treatment for an acute spreading peritonitis—the interval operation. This was the first time peristalsis had been taken into consideration. In 1900 he rebelled against these theories of Tait and brought forth his allaying treatment. Thus purging by cathartics received its check.

The study of peristalsis scored a further victory when it is noted that the success of the Mayo "no loop" operation for gastro-jejunostomy was due not so much to the avoidance of displacing loops of bowel, as that it practically eliminated gastric peristalsis and immediately evoked that of the jejunum. But peristalsis was studied for the first time scientifically by the gradient theory of Alvarez.

THE PERIOD OF ADHESIONS—1900-1915.

But the effect of the teaching of the early operation was not immediately corrected. From 1900 to 1915 could be called the *period of intestinal adhesions*. As action is always equal to reaction in nature, these vigorous measures retaliated, and numerous secondary operations for obstruction of the bowel were necessary. When gynecological lesions and tuberculosis were added to the question such a condition as shown by this extreme case followed:

Case of Post-Operative Adhesions: Mrs. C. Dr. L., 1905. Had been operated upon 6 months before for appendicitis. Since then was operated upon 3 more times, each time for adhesions except that at the second one the right tube and ovary were removed. At the present laparotomy, the 5th in 6 months, the peritoneum showed tubercles. A 6th and a 7th operation for adhesions followed within a few months. Within 2 years she had borne a normal child.

Of all the remedies for peritoneal adhesions the amniotic concentrate alone has the best physiological basis—that of local orientation.

After 10 years of this sort of thing it is no great wonder that there arose an intensive

study of intestinal obstruction. Upon analysis, ileus disclosed a type due to high intestinal obstruction which developed virulent toxins. Thus the correction of a fault of technic put into the hands of surgeons a means of saving life in such cases developing incidentally from natural causes—enterostomy.

Rigidity. In the period from 1880 to 1910 all abdominal symptoms were studied and discussed in terms of the nomenclature of appendicitis. It was found that the symptom of rigidity was rather erratic. Bland-Sutton had earlier noted that some lesions within the liver and the subphrenic space were not revealing the usual symptoms. This led Crile later to name these areas, the "defenseless areas," areas of low immunity.

Rigidity thus became excluded as a symptom of a lesion of the defenseless areas, the posterior peritoneum, and cavities walled off by visceral peritoneum.

The concentrating functions of the peritoneum over and around the gallbladder have marked that fossa also as having a special resistance to infections as well as having a tendency to quicker absorption, or, in the case of malignancy, to metastases. But having also a vestige it has some peculiarities similar to its sister fossae, the right iliac fossa and the pelvis, and possesses some grade of immunity.

The latest invasion of the cavity to be studied is pneumococcal peritonitis from pelvic invasion in young females.

A still later one will be the study of the extension to the abdominal cavity (ulcers) locally from the chest, or from focal infections elsewhere.

The lessons of comparative anatomy that there is a special immunity for each region in the abdomen have forced themselves home, as compared to the rule-of-thumb methods of imitators, for the corrections of the latter may be summarized as follows:

1. Action—While Tait's successes were the most spectacular his practices suffered a correspondingly severe rebuke (reaction), when surgeons of a near-by provincial society "with the new indication for surgical interference" presented him with "numerous healthy specimens" (Kellogg).

2. Action—The "immediate operation" for appendicitis.

Reaction—The Ochsner treatment for acute spreading peritonitis—the interval operation.

3. Action—Obstruction by adhesive bands.

Reaction—Ileus of high intestinal obstruction—enterostomy.

Until now the abdominal cavity must be regarded as a multiple-pouched biological cavity influenced in its resistance to invasion by inflammation and disease by the peculiar environment produced by the functions of the organs in that particular area.

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THE WHY OF THE PROPRIETARIES

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In the ILLINOIS MEDICAL JOURNAL of August, 1932, we noticed an editorial under caption of "Comparative Cost of Medicines Under Proprietary and Chemical Names." The editor made a comparison of costs—to the retailer. He did not go far enough and tell us the "whys" of the proprietaries. There are more reasons than the cost. Of course that particular item is of much more than passing consideration, for it means greater profits to the manufacturer, although not necessarily to the retail druggist, for in some instances, and especially if he be one of the conscientious kind, he does not feel that the majority of his patrons can pay all the freight the traffic will stand. The manufacturers place these patented or proprietaries before the medical public, incidentally the lay public, because of the enhanced profit initially. They give these products outstanding names that may be used in their publicity and finally become household words with the laity. The president, we believe he was, of one pharmaceutical house, in an address that was not private in nature, remarked that the day of the specialty—proprietary, frequently patented—was here to stay and that the old time staples, lower in price, would practically go by the board. We believe the time limit of a patent is something like seventeen years, it may be more or may be less, but regardless of the exact time, the pub-

lie is obliged, during the interval, to pay the price of the proprietary and that regardless of what, reduced to its scientific chemical name, it would cost to produce the chemical in question. The manufacturer must get his cream and it must be of the 40% whipping variety, and no matter if it does add to the high cost of medical care.

Time was when plain bichloride of mercury and iodine were considered pretty good antiseptics. Today we are told we must not use them. The bichloride coagulates albumin and iodine is liable to produce a dermatitis and other argument is handed the poor gullible doctor and he is informed that if he does not use this or that "new" antiseptic, which has some fancy name or is colored in some rather pretty way, he may even become possessed of a malpractice suit. He must also pay a higher price for the new stuff. Not because it is any better or gives more pronounced or satisfactory results than did the old time cheaper staple chemical, for frequently it does not. The detail man does not call to your attention that his product costs much more than the older one, but comments upon the fact that the former is better. Did you ever stop to realize that you can make a pint of 1:1000 bichloride solution for a very few cents and that a like amount of the same strength patented proprietary will cost you perhaps a dollar or more? Just think it over. In the majority of instances both will be mercurial compounds of one sort or other. If the bichloride solution can be made so cheaply, why the high cost of some other compound made from the same basic metal? There is a nice little nut for you to crack. It is the same way with iodine. The good old time tincture is taboo, if we would listen to the makers of newer and higher priced iodine mixtures and compounds. We will admit that possibly there are some iodine mixtures or compounds that are better than the plain tincture. We use one in our practice and have not found its cost prohibitive, either to our own pocketbook or that of our patient. We have found it just as effective as any of the fancifully named proprietaries, if not more so.

Arsenic and its staple chemical compounds are very low in price, as a rule, but let them come in vogue for the treatment of some particular disease and in other than the usual form

and you will see the price go out of all reason. A very small dose of many proprietary arsenic compounds would purchase pounds of the crude metal or of its staple salts.

It is the same way all the way down the line. The manufacturers are forever concocting some new specialty, similar in effect to the old, time tried staples for the simple reason that the specialties bring in more money—until after the patent expires, of course.

There is also a reason for the euphonious names given the majority of these proprietaries. They are first introduced to the doctor by the detail man, with the usual "blah, blah." The doctor writes prescriptions, which of course the patient reads and becomes accustomed to. Finally, the patient, learning that he can buy such things over the druggist's counter for less than he can on prescription, forgets to go to the doctor. Finally again, the patient gets the habit of using these things for almost everything under the sun. With the demand started some manufacturers go so far as to forget the ethical side of the matter and go to the public direct, via printer's ink. This is especially true of the advertising of certain more or less high priced antiseptics and without a doubt the doctor suffers, for the people are forming the habit of tending to presumably minor injuries themselves, following the suggestions offered by the advertising manufacturers.

Many of our chemical and pharmaceutical specialties or proprietaries, have been the by-products of manufacturing plants making other than medicinal chemicals. This, prior to the war, was true of many of the dye houses, where by-products of no known value for other purposes piled up about the plants. Some of these products were tried out through experiments on the lower animals and there then blossomed forth a lot of new medicinal synthetics. Through the use of much printer's ink these were made popular. Such by-product medicinal chemicals became so numerous that the profession had a difficult time in remembering a very considerable percentage of them. From worthless by-products of the dye and other chemical manufacturing plants, these remedial agents became the great profit producing items of such plants. Worthless by-products appeared in the drug market at unheard of prices, none of them being priced at

less than a dollar an ounce. It goes without saying that they were patented, both in the United States and abroad, and so the high price was protected and maintained for a goodly number of years. None of the manufacturers of medicinal chemical could, during such intervals, offer any such products under their real chemical names for fear of suits for infringement. It goes without saying that the patented by-products were given fanciful names, easy of pronunciation and frequently with the indication for their use and application plainly printed on the package. Of course they were introduced to the world by way of the doctor. The medical profession was assured that such products would be handled only in the highest possible ethical manner. Because of their catchy names the laity soon became acquainted with them, both by name and action, with the result that, instead of going to the doctor for a prescription for them, they were purchased over the counters of the retail druggists. Some of the makers of these synthetics went so far as to package them for such sale. This continues to be a fact, despite the added fact that the manufacturers have never ceased detailing the products to the doctor and many of the latter have continued the use of the higher priced products because of the fact that it has been claimed by their makers that they are superior to the same products offered at a lower price and under their scientific chemical names. We have been told, and have been expected to believe the assertion that it is out of the question for any concern to offer these specialties for a lower price than that of the original patented article. That, no matter what the standing of the concern making the lower priced article. During its patented days antifebrin, for example, sold at a dollar or perhaps more per ounce. When the patent expired acetanilid replaced antifebrin at, if we remember correctly, a price of *less than a dollar a pound* to the retail druggist. The same has been equally true of a legion of such products. That there must have been an immense profit to the producers of the patented by-product proprietaries is evidenced by the fact that the makers of later and like chemicals have none of them showed failure in business, but have invariably shown a profit to their owners.

Some medical investigator finds a certain

chemical, usually not of more than ordinary cost of manufacture, and announces the results of his experimental work. He may never have given much thought to the commercial possibilities of the product, but along comes a manufacturer who, like Colonel Sellers, sees "millions in it" and we are at once deluged by printed matter, detail men and advertising of a something that excels all other products of its kind and at a higher price than that of the latter. Again we note the fanciful name given the product. Later, if the product has gained any support from the medical profession, we see it advertised to the laity. This has happened very recently, when certain pharmaceutical and chemical manufacturers have used full page space in several of the leading popular magazines. Again such products have been packaged to sell directly to the laity. It goes without saying, as they are specialties or proprietaries, they are offered at prices out of all reason.

FIFTY PER CENT. OF ALL GENERAL PROPERTY TAXES COLLECTED IN ILLINOIS IS USED TO CARE FOR THE MENTALLY UNSOUND

We are warned by Rodney H. Brandon, director of the state department of public welfare, that the mentally unsound and delinquent in Illinois institutions are increasing far faster than the population; that already they number 25,000; and that about 50 per cent. of all general property taxes collected by the state is used to care for them. He says:

"Mental unsoundness in Illinois heads the list of all those causes which bring unhappiness to the general public. The insane in hospitals have increased from 650 to the million in 1880 to 3,000 to the million now. Incarceration of the mentally deficient has increased from 50 to the million in 1880 to 600 to the million."

These facts are serious enough. How much of the increase in cases of mental unsoundness and delinquency is due to the "killing pace" of our civilization? That's hard to say. More defectives, in proportion to population, are discovered and confined now than in 1880, for many who would have been classed as normal in 1880, would be classed as defective now. But the numbers of mentally unfit are no doubt increasing alarmingly, and in a congested population, Mr. Brandon's suggestions toward cure and prevention must be followed—gland research, study of food neglect and of bad environment. He aims at prevention as well as cure of feeble mindedness and most mental cases.

Mental disturbances are a social challenge. The increase in such cases menaces our civilization—but civilization alone can solve the problem.

Society Proceedings

CHRISTIAN COUNTY

The physicians of Christian County gave a banquet at the Taylorville Country Club on May 31, 1933, in honor of the three oldest practitioners of the county: Dr. G. J. Rivard of Assumption having practiced continuously at this place for 52½ years. Dr. C. A. Stokes of Edinburg, Christian County having practiced at this place for over 50 years. Dr. J. F. Miller of Palmer, Christian County, having practiced at that place for 46 years. These three men we feel comprise a unique body of physicians. They have lived and practiced through the evolution period of the worst roads and poorest means and hardest struggles of the practice of medicine to the present time involving the finest roads and the most satisfying manner of practicing medicine in the country. All three of these men are in robust health and are working at the practice as ardently as any three doctors in the county.

At this banquet there was 25 doctors and their wives. After the banquet Dr. Eberspacher of Pana touched up the high-lights of Dr. Rivard followed by an address by Dr. Mercer of Taylorville extolling Dr. Stokes, after which came Dr. Herdman's speech in which he told a great deal of the life of Dr. Miller. All of these talks in honor of the Doctors were very interesting. Each was presented with a lovely bouquet of roses.

E. M. Bennett, M.D.

Sec. Christian Co. Med. Soc.

LEE COUNTY

The Lee County Medical Society held their big annual meeting at the Dixon State Hospital on Thursday, May 11. There were 425 Doctors and Nurses from the northern part of Illinois and the southern part of Wisconsin present.

During the past year the Illinois legislature enacted a law providing hospital care at Dixon state hospital for encephalitis, or "sleeping sickness" cases and a number of these cases have since been committed to this hospital, where a special study of this dreadful disease is being conducted. A report of the progress made was a part of the interesting program last evening.

The audience was such a large one that it was necessary to hold the meeting in the largest building on the grounds, which is the recreation building. This had been beautifully decorated with wall hangings made by patients and many of them are beautiful scenes and would be almost priceless if held in a private collection. The tulips which

were used to decorate the tables and the stage were also made by patients and had been waxed so that they were a perfect imitation of natural flowers and every bit as beautiful. The decorative scheme and the large attendance were such that it was decided to have photographs taken of the meeting this year.

Dr. Warren G. Murray, managing officer of the hospital, together with members of his staff, conducted many of the doctors through this big institution during the afternoon so that they might see the various types of patients and learn how they are handled.

At 6:00 P. M. the guests began to assemble in the recreation building where they were entertained by an orchestra concert by the Dixon state hospital orchestra, under the direction of Professor Wallace P. Smith.

After the banquet the young ladies who had served it so efficiently presented each lady guest with a box of candy, and there were cigars for the gentlemen. These banquets and the manner in which they are served, bring much praise to those who prepare and serve them.

Following the banquet, Dr. David Murphy, president of the Lee County Medical Society, called the meeting to order and introduced the host, Dr. Warren G. Murray, to whom he turned over the meeting. Dr. Murray assured all the guests that they were welcome at all times to visit this institution and he thanked the doctors for having come such a distance to attend this particular meeting. He then introduced the principal speaker of the meeting, Dr. Edward S. Judd, Chief of Staff of the Mayo Clinic, who delivered a most interesting and instructive address on the subject of "Acute Cholecystitis" which is inflammation of the gall bladder, and he explained the various causes that lead up to this condition, the symptoms which indicate how serious it may be, and described in detail the latest and most effective means of treating this fairly common condition. He called attention to the fact that it is not advisable to operate on these cases during the acute stage, but these cases should be in the hospital, under close observation until the inflammation has subsided to a point where it is advisable to operate. A part of his address was illustrated by some excellent lantern slides, thrown upon the large movie screen by a new type of lantern operated by J. A. Dauntler of Dixon. These slides illustrated the various changes in the gall bladder and are the result of a study of a large number of Cholecystitis cases, and nearly all physicians have learned to base their care of such diseases upon the results attained in thousands of such cases, which accounts for the constantly improving results attained throughout the United States.

Dr. Murray then introduced Dr. Gladys H. Dick, Associate Director, Scarlet Fever Committee, Chicago, who

gave the doctors some very interesting information regarding the practical results in the control of scarlet fever. Dr. Dick is justly proud of the fact that since she first began the use of scarlet fever toxin-anti-toxin on the patients at the Dixon state hospital six years ago, there has not been a single case of scarlet fever among those immunized.

This is especially interesting because the patients in this state hospital were found to be more susceptible than children outside the hospital. Dr. Dick is about ready to issue a report to the medical profession on the results of this method of preventing scarlet fever on over 50,000 cases. This is a record which will go down in history, and Dr. Murray in introducing this speaker stated that he was confident that the work done by Dr. Dick would eventually be classed with that done by such wonderful scientists as Pasteur, Dr. Jenner, and those who have been instrumental in wiping out some of the dreadful diseases that human beings fall heir to. This opinion of Dr. Murray is shared by all of the doctors who know of this work.

The next speaker introduced was Dr. Francis J. Gerty, Professor of Neurology and Psychiatry, Loyola University School of Medicine, Superintendent of Cook County Psychopathic Hospital, who entertained his audience with "A Discussion of the Various Procedures in the Handling of Cases Committed to Cook County Psychopathic Hospital." A great many people read daily cases which come before judges in Chicago, who are either mental cases or attempt to deceive the judge by acting as such. These cases are committed to the Cook County Psychopathic Hospital where a careful examination is made to determine their true mental condition and a report is made to the judge. This institution fulfills a necessary place in present day criminology. This was an exceptionally interesting talk and explained to this large audience the manner in which these mental cases are handled before they are committed to either a penal institution or a hospital for mental cases.

Dr. Zoltan Glatter of the Dixon State Hospital staff presented two cases of muscular dystrophy, which is an incurable disease, and they were shown in order to illustrate the retrograde progress.

Dr. B. D. Hart of the Dixon State Hospital staff presented a case of arsenical multiple neuritis to show the improvement after a year's treatment.

Dr. C. C. Rowley of the hospital staff presented two types of cases of encephalitis, or so-called "sleeping sickness." He explained that efforts were being made in many parts of the world to find some cure for this dreadful disease which often follows influenza, and explained the work being done with these patients at the Dixon State Hospital.

Dr. Ivan N. Radeff of the state hospital staff demonstrated an ingenious new physiotherapy apparatus which he had devised to help some of these unfortunate children in their attempt to take care of themselves.

Dr. Murray, who has had a great deal of experience in the care of defective delinquents and who has addressed societies in various parts of the United States on this subject, discussed this urgent problem, calling attention again to the fact that these patients should be committed to an institution properly fitted so that they could not readily escape and so, again, become a menace to society.

Marriages

Chester C. Doherty, Chicago to Miss Bernadine Flynn of Madison, Wis., April 29.

John J. Hopkins to Miss Iva Bromley, both of Decatur, Ill., May 7.

Van Buren Mauricau, Morton, Ill., to Miss Frances Kraemer of Joliet, April 22.

Reginald Michael Norris, Jacksonville, Ill., to Miss Mary Schultz of Beardstown, April 24.

Milton C. Schell, Chicago, to Miss Dorothy Wagner of Springfield, Ill., April 29.

Raymond S. Simenson, Chicago, to Miss Violet Starks of Madison, Wis., April 22.

Personals

Dr. E. Gorter, Leiden Holland, addressed the Chicago Pediatric Society, May 20, on "Copper and Anemia in Childhood."

Dr. Anton J. Carlson spoke, among others, before the Chicago Society of Internal Medicine, May 22, on "Endocrinology in the Laboratory and in the Clinic."

Dr. James Curtis Lyter, St. Louis, addressed a recent meeting of the Union County Medical Society at Anna on diseases of the coronary arteries.

Dr. Horace W. Soper, St. Louis, addressed the St. Clair County Medical Society, June 1, on "Diagnosis of Diseases of the Rectum and Colon."

Dr. Norman C. Bullock has been appointed health officer of Rockford, succeeding Dr. Nordahl O. Gunderson, who has held the position for ten years.

Dr. Frank H. Lahey, Boston, addressed the Winnebago County Medical Society, Rockford, June 13, on "Malignancy of the Colon and Rectum."

Dr. Roberto Alessandri, director of surgery, Royal University of Rome, lectured on "Surgery of the Stomach" at Columbus Hospital, June 10; a dinner in his honor preceded the talk.

Dr. Oscar J. Hagebush has resigned as manager of the Anna State Hospital, after four years' service. Dr. Daniel D. Coffey has resigned in a similar capacity at the Chicago State Hospital at Dunning, after twelve years' service.

Dr. Oscar T. Schultz, Evanston, among others, addressed a joint meeting of the Vermilion County Medical Society and the Vermilion Bar Association, Danville, May 2, on "Relation of Medicine to Law in the Administration of Justice."

Dr. George W. Morrow is now in charge of the Kankakee State Hospital, succeeding Dr. Roy O. Hawthorne, who, it is expected, will return to Monticello to resume private practice. Dr. Hawthorne was superintendent of the institution for two years.

Drs. Aaron E. Kanter and Perry J. Melnick presented a paper on "Thecomas of the Ovary" before the Chicago Gynecological Society, June 16, and Drs. William M. Spear, Oakdale, Iowa, and Henry C. Hesseltine, one on "Significance of Menstrual Disturbances in Pulmonary Tuberculosis."

Dr. Frederick M. Meixner, Peoria, addressed the La Salle County Medical Society at Harding, Illinois, June 7, on "Clinical Aspects of Childhood Tuberculosis."

News Notes

—Dr. Henry K. Pancoast, professor of roentgenology, University of Pennsylvania School of Medicine, Philadelphia, and Dr. Anthony J. Lanza, assistant medical director, Metropolitan Life Insurance Company New York, participated in a meeting on silicosis, June 12, sponsored by the industrial committee of the Chicago Tuberculosis Institute at the Chicago Woman's Club. Dr. Pancoast will speak on "Roentgenologic Diagnosis and Differential Diagnosis in Connection with Silicosis," and Dr. Lanza, "Silicosis in the United States."

—The Joseph A. Capps Prize of \$500 is offered by the Institute of Medicine of Chicago for the most meritorious investigation in medicine or in the specialties of medicine. The investigation may be also in the fundamental sciences, provided the work has a definite bearing on some medical problem. Competition is open to graduates of Chicago medical schools who have received the degree of doctor of medicine during the year 1931 or thereafter. Manuscripts must be submitted to the secretary of the institute, 122 South Michigan Avenue, Chicago, not later than December 31.

—A program of immunization against smallpox, diphtheria and typhoid is being carried on by the Jackson County Health Council, according to the *Illinois Health Messenger*. The county has been divided into thirteen districts, in each of which popular meetings will be held, with an address by a member of the county medical society and motion picture films. Local civic agencies are cooperating. The Jackson County Health Council is composed of representatives of agencies interested in public health. The county medical society plans to hold a clinic for physically handicapped children during June.

—During the summer and fall a one day lecture course in pediatrics will be conducted in

eleven districts of Illinois, under the auspices of the American Academy of Pediatrics and the educational committee of the Illinois State Medical Society. The following cities have been tentatively selected as the centers: Chicago, Rockford, Rock Island, La Salle, Peoria, Springfield, Quincy, Champaign, East St. Louis, Effingham and Benton. Subjects to be covered by the course include care of the new-born, care and feeding of infants, preventive pediatrics, behavior problems and discipline in children, and general treatment of the sick child. The five pediatricians who have been selected to organize groups of teachers are Drs. Isaac A. Abt, Julius H. Hess, Joseph Brennemann, Clifford G. Grulee and Robert A. Black, all of Chicago.

—More than \$2,000,000 has been bequeathed to the University of Chicago by the late W. G. Zoller to establish and maintain a free dental dispensary, according to the *Chicago Tribune*. The income will be used by the university "for the purpose of equipping and maintaining dispensaries and laboratories and to supply competent and skilful dental service, including diagnostic aids to the needy and poor, free of charge, in such manner that the greatest number of people may secure skilful treatment to enable them to be relieved, and to prevent the numerous ills which result from neglect of the teeth." Other benefactions include \$10,000 each to Central Free Dispensary and the Home for Destitute and Crippled Children, and \$5,000 to the Chicago Home for Incurables. Mr. Zoller was formerly vice president and treasurer of the Bell and Zoller Coal Company.

—During Medical Week, which is sponsored by the Chicago Medical Society and A Century of Progress, the following physicians delivered addresses at 8 p. m., at the Hall of Science on the Fair grounds:

June 19: James A. Britton, Treatment of Tuberculosis. Chauncey C. Maher, Causes of Heart Disease.

June 20: Edwin W. Ryerson, Orthopedic

Treatment of Infantile Paralysis. Austin A. Hayden, Conservation of Hearing.

June 21: Walter W. Hamburger, Heart Disease. Julius H. Hess, The Infant of Today. Gilbert Fitz-Patrick, Cancer: a Public Health Problem.

June 22: Walter H. Watterson, Modern Facts on Tuberculosis.

June 23: Philip H. Kreuscher, The Ache in Your Back. Isaac A. Abt, Pediatrics.

RADIO TALKS

June 19: William Allen Pusey, Purpose of the Medical Exhibits. Herman L. Kretschmer, Your Health and Your Doctor.

June 20: Franklin H. Martin, One Hundred Years of Progress in Hospital Care.

June 21: Edward H. Cary, Dallas, Texas, Saving Your Eyes.

June 22: Morris Fishbein, Frontiers of Medicine.

June 23: Francis Berger Trudeau, Saranac Lake, N. Y., Prevention and Care of Tuberculosis.

—At the recent meeting of the Chicago Urological Society the following officers were elected for the coming year: president, L. L. Veseen; vice-president, C. Otis Ritch; secretary-treasurer, (For two years), Ben Earle Fillis, 1056 Gage Street, Winnetka, Illinois.

—The State Department of Public Health has made arrangements with the National Broadcasting Company to fill a 15 minute period each Tuesday morning from 9:15 to 9:30, Chicago daylight saving time, during the period of the Century of Progress.

This series of broadcasts will be devoted to the public health features of scientific exhibits on display at the Century of Progress. The above is in addition to the regular weekly broadcasting schedule of the Department over WGN which takes place on Saturday morning at 11:50 Chicago daylight saving time.

Deaths

WILLIAM ROBERT BLACKBURN, Virginia, Ill.; Barnes Medical College, St. Louis, 1898; member of the Illinois State Medical Society; aged 66; died, May 3, of pulmonary thrombosis and chronic myocarditis.

SAMUEL J. BLACKMAN, Harrisburg, Ill.; Marion-Sims College of Medicine, St. Louis, 1896; member of the Illinois State Medical Society; aged 69; died, April 28, in the Lightner Hospital, of asthma.

HORATIO N. BOSHELL, Melvin, Ill.; Rush Medical College, Chicago, 1895; A Fellow, A. M. A.; aged 61; died, May 27, in St. Mary's Hospital, Kankakee, of injuries received in an automobile accident.

AMBROSE MCCHESENEY BROWN, Dwight, Ill.; University of Pennsylvania School of Medicine, Philadelphia, 1920; on the staff of the Veterans' Administration Hospital; aged 38; died, April 7, of an overdose of a sleeping potion.

CHARLES ELMER BROWN, Rossville, Ill.; Bennett College of Eclectic Medicine and Surgery, Chicago, 1896; Northwestern University Medical School, Chicago, 1903; aged 64; died, May 1, in the Lake View Hospital, Danville, of septicemia and prostatic abscess.

VIOLET PALMER BROWN, Kankakee, Ill.; Northwestern University Woman's Medical School, Chicago, 1898; aged 57; died, May 16, in the Wesley Memorial Hospital, Chicago, of carcinoma of the liver and diabetes mellitus.

EUGENE COHN, Kankakee, Ill.; Barnes Medical College, St. Louis, 1898; a Fellow, A. M. A.; Northwestern University Medical School, Chicago, 1906; fellow of the American College of Surgeons; formerly superintendent of the Kankakee State Hospital; aged 58; died, May 30, of heart disease.

WILLIAM ANDREW DIFFENBAUGH, Chicago; Hahnemann Medical College and Hospital, Chicago, 1912; aged 56; died May 27, in a hospital at Columbia City, Ind., of peritonitis, following a colostomy.

JAMES HARNEY FOUNTAIN, Chapin, Ill.; Rush Medical College, Chicago, 1881; a Fellow, A. M. A.; aged 74; died, May 14, in the Passavant Hospital, Jacksonville, of morphine poisoning, presumably self administered.

CHARLES E. GILES, Chicago; Howard University College of Medicine, Washington, D. C., 1907; aged 50; died, March 5, in the Chicago Municipal Tuberculosis Sanitarium, of tuberculosis.

MARCUS OFFUTT KAGY, Chicago; University Medical College of Kansas City, Mo., 1911 a Fellow, A. M. A.; aged 47; died, May 9, of perforated duodenal ulcer.

ERVIN A. MADER, Chicago; Loyola University School

of Medicine, Chicago, 1922; a Fellow, A. M. A.; aged 39; died, May 26, in the Edward Hines, Jr., Hospital, Hines, Ill., of tuberculosis.

HARRY E. MAYOR, Troy Grove, Ill.; Keokuk (Iowa) Medical College, College of Physicians and Surgeons, 1900; aged 57; died, May 22, as the result of a cerebral hemorrhage.

THOMAS J. MCKINNEY, Champaign, Ill.; Medical College of Indiana, Indianapolis, 1883; Northwestern University Medical School, Chicago, 1898; member of the Illinois State Medical Society; fellow of the American College of Surgeons; on the staff of the Julia F. Burnham Hospital; aged 73; died, May 27, in the Kenilworth (Ill.) Sanitarium.

FREDERICK OLIN PEASE, Chicago; Chicago Homeopathic Medical College, 1886; aged 80; died, April 17, at his brother's farm near Pipestone, Minn., of cerebral hemorrhage.

SOL ROSENBLATT, Chicago; Reliance Medical College, Chicago, 1909; Bennett Medical College, Chicago, 1912; member of the Illinois State Medical Society; served during the World War; aged 58; died suddenly, May 22, of heart disease.

WILLIAM L. RUGGLES, Oak Park, Ill.; Chicago Homeopathic Medical College, 1891; a Fellow A. M. A.; on the staff of the West Suburban Hospital; aged 68; died suddenly April 29 of heart disease.

ELEANOR CLARY STOCKS, Chicago; Johns Hopkins University School of Medicine, Baltimore, 1920; aged 40; died, May 27, in the Wesley Memorial Hospital, of bacterial endocarditis.

JAMES J. TROUTT, Nashville, Ill.; University of the City of New York Medical Department, 1872; aged 88; died, April 24, of carcinoma of the right testicle.

WILLIAM HYDE WEST, Woodstock, Ill.; Hahnemann Medical College and Hospital, Chicago, 1911; a Fellow, A. M. A.; fellow of the American College of Surgeons; formerly secretary of the McHenry County Medical Society; surgeon to the Woodstock Hospital; aged 47; died, May 11, of injuries received when he fell from a horse.

JAMES H. WHEELLESS, Thebes, Ill.; College of Physicians and Surgeons, Keokuk, Iowa, 1881; aged 83; died, March 26.

JOHN KING WINER, Chicago; Rush Medical College, Chicago, 1884; assistant professor (extramural) medicine, Northwestern University Medical School; on the staff of the Passavant Memorial Hospital; aged 70; died suddenly, May 14, of arteriosclerosis, myocarditis and coronary thrombosis.



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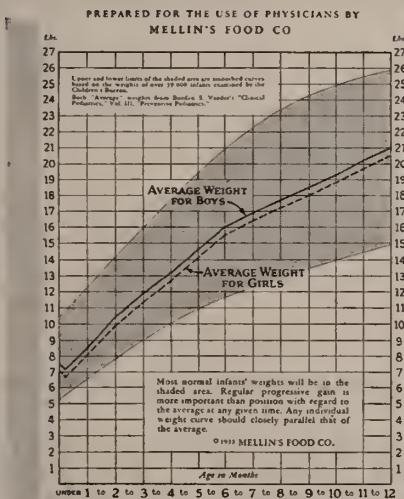
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Book Reviews

INTERNATIONAL CLINICS. EDITED BY LEWIS HAMMAN, M.D. Vol II. 43d Series, 1933. Philadelphia, Montreal & London. Price \$0.00

This is a quarterly of illustrated clinical lectures and especially prepared original articles on all phases of medicine including the specialties.

MEDICAL STATE BOARD EXAMINATIONS. BY HAROLD RYPKINS, M.D. Philadelphia. Montreal & London. J. B. Lippincott Company. 1933. Price Cloth, \$4.50 net.

This work is an organized review of actual questions given in medical licensure examinations throughout the United States.

ARTERIOSCLEROSIS A SURVEY OF THE PROBLEM. A PUBLICATION OF THE JOSIAH MACY, JR. FOUNDATION. EDITED BY EDMUND V. COWDRY. New York. The Macmillan Company. Price \$5.00.

This volume presents the results of a survey of the problem of arteriosclerosis made by Josiah Macy, Jr., Foundation with the cooperation of leading American and European investigators. The primary purpose of the survey was to bring to light all the known facts and by viewing the problem from many angles to reveal the most promising lines of research.

SENILE CATARACT. SECOND EDITION BY W. A. FISHER, M.D. 267 Pages 183 illustrations, 112 of which are colored. Chicago, Illinois. Chicago Eye, Ear, Nose & Throat College. 1933.

In the compilation of the work the author collaborated with several of the world's outstanding eye men, namely, Prof. E. Fuchs, Vienna, Austria; Prof. I. Barraquer, Barcelona, Spain; Dr. H. T. Holland, Shikarpur, Sind.



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India; Dr. John Wesley Wright, Columbus, Ohio; Dr.
Van Lint, Brussels, Belgium; Dr. O. B. Nugent, Chi-
cago; Chapter VII describes a method by which any
competent eye surgeon can obtain a fine technic.

Chapter IX is new and is possibly the last word in
technic for safety. The author comments that to wait
for one to be blind, or for a cataract to ripen is not
necessary, that it is best to operate at once because the
patient is actually getting more infirm and adding com-
plications.

In Chapter IX an attempt has been made to eliminate
ambidexterity which is of importance. Very few op-
erators claim a mbidexterity.

The book contains chapters from some of the most
prominent eye surgeons in the world.

DIET IN SINUS INFECTION AND COLON. BY EGON. V.
ULLMANN, M.D. Recipes and menus by Elza Mez.

New York. The Macmillan Company. 1933. Price
\$2.00.

THE MEDICAL CLINICS OF NORTH AMERICA. (Issued
serially, one number every other month.) Volume 16,
No. 6. (Mayo Clinic Number—May, 1933.) Index
Number. Octavo of 239 pages with 28 illustrations.
Per Clinic year, July, 1932 to May, 1933. Paper,
\$12.00; Cloth, \$16.00 net. Philadelphia and London:
W. B. Saunders Company, 1933.

Contributors to this number are Drs. Allan, Alvarez,
Bargen, Barker, Berkman, Darnall, Davis, Hargrave,
Hartman, Hench, Horton, Keith, Kennedy, Keyes,
Koelsche, Lansbury, Moersch, Plummer, Prickman,
Rivers, Ryneanson, Snell, VanZant, Vinson, Wakefield,
Wilbur, Willius.

**PSYCHONALYSIS AND MEDICINE. A STUDY OF THE WISH
TO FALL ILL.** BY KARIN STEPHEN. New York. The
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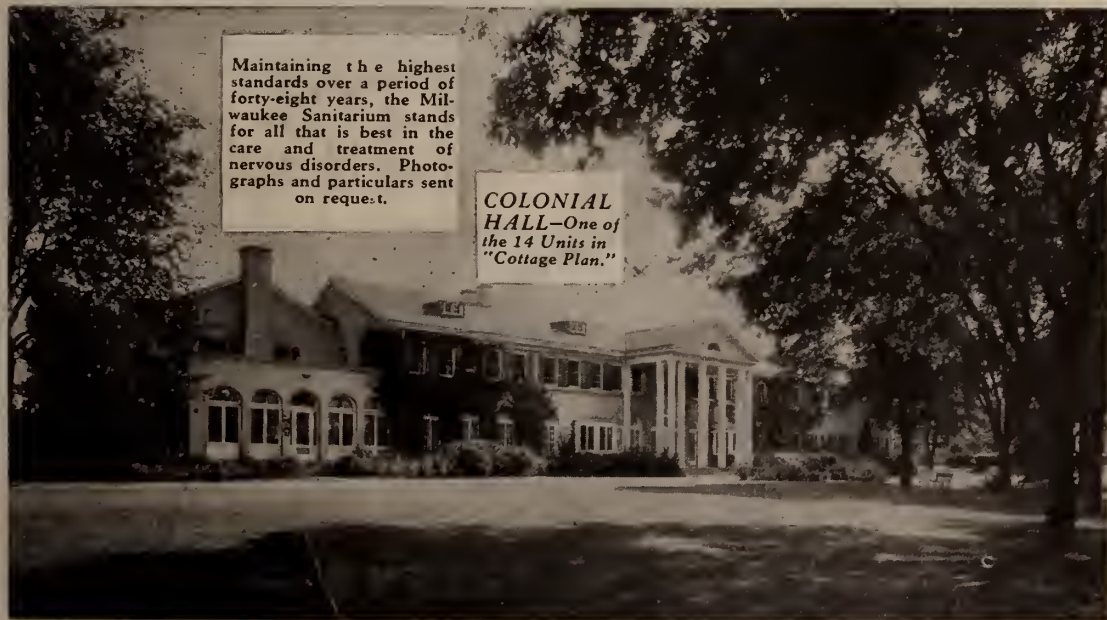
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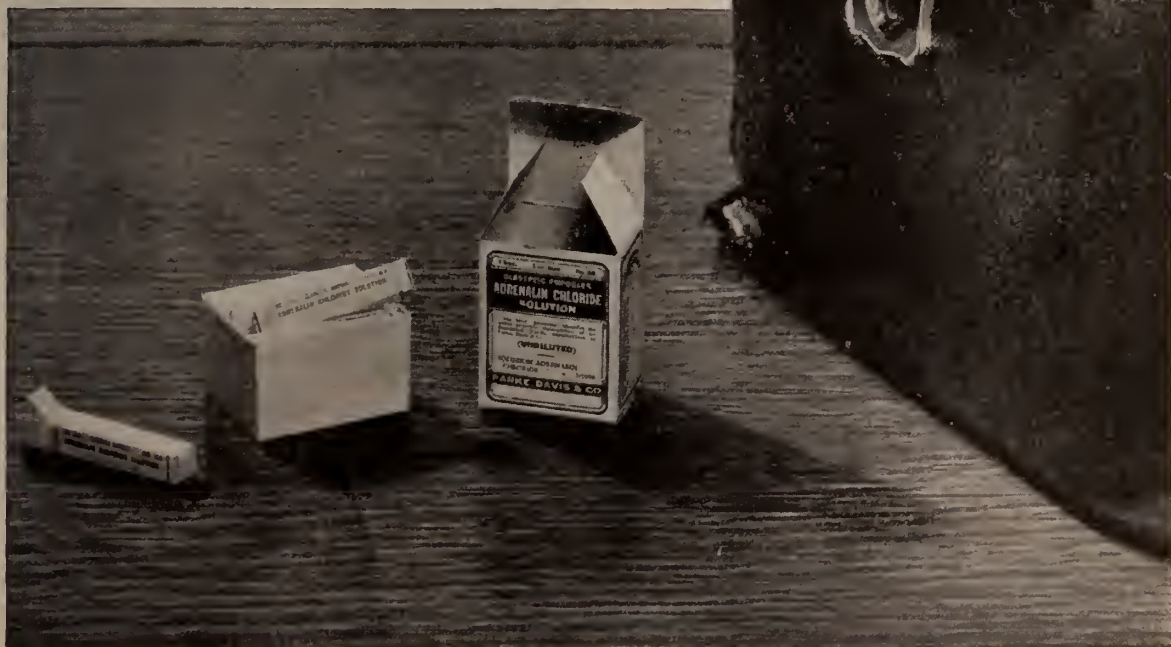
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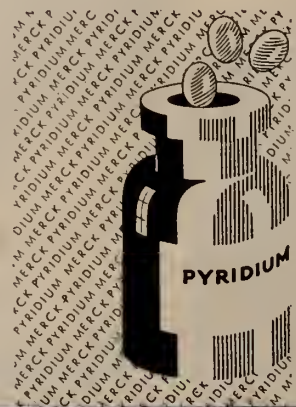
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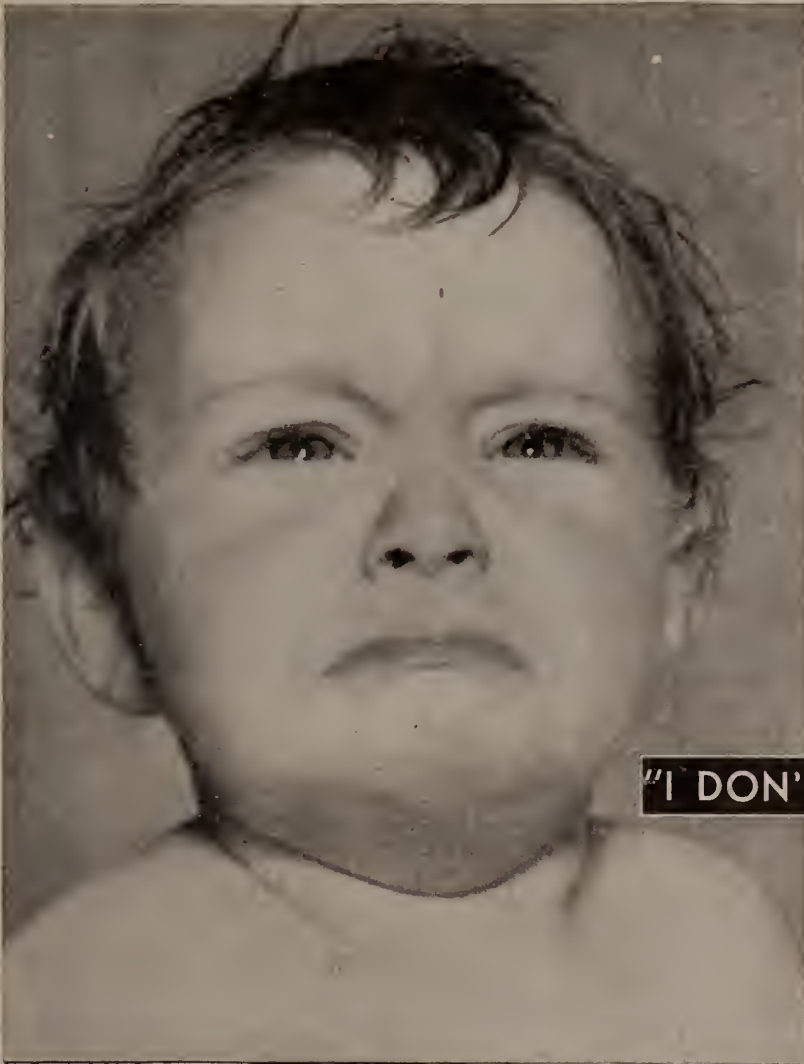
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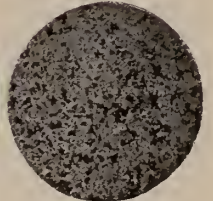


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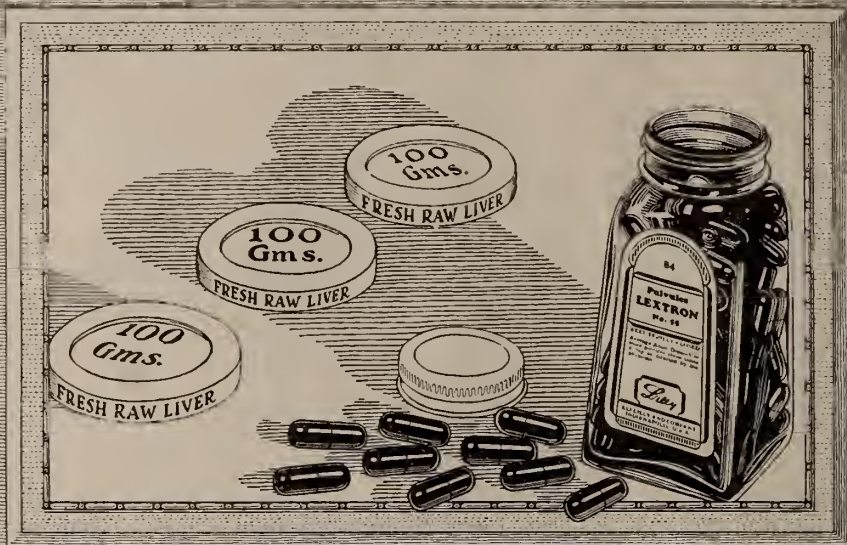
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Editorials

SHOULD WE HAVE GENERAL HOSPITAL CARE FOR CURRENT TUBERCULARS?

Popular attention the last decade has been so persistently fixed on the venereal, heart and cancer menaces that the ever present, unabating prevalence and danger of active and ambulatory tuberculosis cases has been comparatively overlooked. Even professional education in tuberculosis has lagged and continued inadequate.

During this depreciation in general interest as to tuberculosis many disquieting and rather revolutionary theories have been launched and received with great indifference considering that so little stress is laid upon discrimination between open and closed cases of tuberculosis.

Even the notable authority on tuberculosis, Dr. Benjamin Goldberg, who is arguing for the admission of tubercular cases to general hospitals seems to minimize what to the average mind would be the danger line. No matter how great may be the economic stress of medicine never should science be sacrificed for the sake of economics.

Undoubtedly Dr. Goldberg agrees with this statement. However this danger line is of the maximum importance and should be emphasized whenever this question of tubercular admission to general hospitals comes up for discussion. There is much of merit in the idea, and much that merits acute scrutiny.

The tubercular patient is consigned as a rule, stock, lock and barrel to the tuberculosis specialist, and to the tuberculosis hospital or institute. Which would be marvelously competent in its ruling were it not for the fact that here again is a shining case of the confounding of practice and theory. One of the gravest perils to humanity to-day is the positive unsupervised case of tuberculosis that has slipped through the hands of the specialist in this disease, and

equally skillfully the institute or sanatorium.

For this evasion the two chief reasons are ignorance and inefficiency, and pride and poverty on the part of the patient. Only too often, too, the especial tuberculosis hospital is crowded and overflowing. Now where without any degree of danger to others the tuberculosis patient can be installed in a general hospital there would seem to be no argument against, and hundreds of arguments for, just such hospitalization, whether for bed service or merely clinical treatment as outpatients.

It is estimated that in Chicago to-day there are at least 3400 known open cases of tuberculosis with positive sputum, free and at large and without institutional supervision. To this number add the estimated 1100 or more unreported cases, without any sort of supervision that are mingling freely with Chicago's congested population and as freely spreading the dread white plague. It is not altogether impossible that this estimate is too low.

For all we know there may be even half as many again unreported cases as the one third that conservative statistics admits.

Since the maximum supervision of tuberculosis patients means the minimum of infection the necessity for supervision is obvious. Complete hospitalization would of course be the ideal treatment. While the most effective measure is hospital or sanatorium supervision, yet the incidence of infection is greatly decreased by supervision in the field.

This is well known, just as it is a known and admitted fact that every open case of tuberculosis is a manifold menace to the community. The degree of danger increases in a direct ratio with the decrease in the social scale of the patient. It has been stated by no less a tuberculosis authority than Dr. Benjamin Goldberg in his book, "The Control of Tuberculosis," that "if it were possible to give hospital supervision to every open case of tuberculosis in a community, within a decade or two we would have no tuberculosis."

If Dr. Goldberg is correct in his appraisal of the diatribe of doctors of distinction in re tuberculosis then no time should be lost in getting every open case of tuberculosis under immediate field supervision if hospital supervision is nonavailable. The question arises, too, that with all the empty beds in general hospitals why

can't a few of these non-working liabilities on the institution be made to serve the best ends of humanity? *It should be borne in mind however that such tactics should never be attempted by any general hospital unless this opening of its facilities to the tubercular means ample protection from infection for the nontubercular patients in the institution.* It is unsound economics to run a hospital with vacant beds, just as it is unsound humanitarianism, but it is a crime against both principles to admit tubercular patients to any privileges by which may be increased the potentiality of their community menace.

Commenting further on Dr. Goldberg's idea: Now the reasons why, supplementing the sanitarium, the general hospital should care for the tuberculous patient are manifold and cogent.

Often the sanitarium is both crowded and with a waiting list; while the general hospital has vacant beds and as a result a consequently increased per capita cost. In other words, the hospital eats its head off while its work remains undone. It seems unsound economics to permit beds, which may be used to the great benefit of the community, to remain empty and idle.

Further it is unsound hospital management to exclude the tuberculous patient, if he can be cared for in the hospital without detriment to others or without lowering of the hospital routine standards. Empty beds are a loss; empty beds should be filled, with deficit reduction to the hospital, with economic profit to the community, and with health profit and lifesaving to the individual patient and as such to the family and the nation.

Laboratory and x-ray departments, electrocardiograph divisions and the like, in a general hospital frequently run at half capacity or even less. Yet the personnel must be maintained and paid, with obvious waste when high-salaried laboratory personnel is idle during part of the working day. To accommodate tuberculous patients in those empty beds, would increase routine business in the various laboratory divisions.

In the case of the general private hospital (presuming that admitted tuberculous patients can pay, as can many of them) this, of course will mean definitely increased revenue for the individual hospital and a thankfully decreased deficit.

The entire economic structure of the small

community is in itself a sufficient reason for the acceptance of tuberculous patients in general hospitals in thousands of towns.

Now the average small community is able usually to do one of two things—either it is able to afford and support a general hospital or to afford and support a small sanitarium commensurate with its needs.

Without inadvisable strain on its financial structure, such communities cannot adequately support both institutions at the same time.

In such small communities, where the sanitarium in itself is inadvisable or impossible, justifiable and satisfactory compromise may be made by amalgamating sanitarium and hospital functions in a well planned and well coordinated institution. Indeed such amalgamation is often called for by the humanitarian instinct which unconsciously urges man to help his fellowmen.

Public sanatoria are thronged to capacity. Each institution has a long waiting list. In the case of the Municipal Tuberculosis Sanitarium, there is a waiting list always of from four to five hundred patients.

The tuberculous individual has no place to go. He cannot get into the sanatorium. He is denied admission to the general hospital. He sees that he is becoming worse daily, and despondency accentuates the downward trend of the disease, while his lack of isolation helps in the spread of the plague. To throw open the doors of the general hospitals to tuberculous individuals, many of whom can afford to pay, is both a progressive and humanitarian step, giving hope to the hopeless, and inaugurating a health and life saving measure. Further it is first aid to self preservation and the wish to survive is in the forefront of our consciousness.

Public health organizations are designed in their entirety to serve this instinct of self-preservation.

When people are conscious of a health menace, they wish to avoid it. Public health organizations when conscious of a health menace must do everything possible to minimize or eliminate that menace and every open case of tuberculosis is a potential community menace that cannot be repeated too often.

Every case of open tuberculosis, taken from the community and supervised in a hospital or sanatorium, represents definite diminution in

the stream of community infection. For our own sakes, we must take care of the tuberculous individual. We can take care of him better in an institution, either hospital, sanatorium or convalescent home.

Properly cared for the tuberculous individual is not a menace to the hospital population and he can be admitted without detriment to hospital routine or hospital patients.

Yet in every detail the tuberculous patient demands, and should receive, specialistic care.

The type of care given to tuberculous individuals in the old boarding-house type of institution is today recognized as inadequate, and characterized as neglect. The progressive sanatorium aims to give specialistic care. In attempting to reach this objective these sanatoria are lifting themselves to the plane of the general hospital. In many communities, as in many sanatoria, this phase of institutional evolution has not as yet been reached. So for such communities and such sanatoria the cooperation of the general hospital is of prime necessity. Specialistic care that cannot be furnished in the sanatorium, can be given in the hospital. Such patients as need attention and service which cannot be rendered at the sanatorium may be transferred to the hospital for the necessary treatment. The tuberculous patient in the general hospital can have the advantage of service by a competent specialistic and consultant staff. He will find available the type of service which is economically impractical except in large progressive municipal institutions in the neighborhood of big cities and this point should be considered both by small communities and by many suburbs of large cities. When the attention of the general hospitals focuses on "T.B.'s" it means fresh impetus to research in the disease.

Research in tuberculosis has been lagging. Funds available in sanatoria for research purposes are, as a rule, inadequate. In the general hospital, tuberculosis research can be linked up with general research with mutual advantage, and with mutually better prospects. The tuberculous patient in the general hospital can furnish the necessary background and clinical material; the personnel is already in the hospital and the equipment installed. The added expense involved in tuberculosis research will be insignificant in comparison with the installation of a separate research department for

tuberculosis, in any specialized tuberculosis sanatorium. Along with the research will come a greater and more ardent professional education in tuberculosis, at present also lagging and inadequate.

From the point of view of both didactic and practical work, the curriculum in most medical schools is woefully insufficient. This is because the tuberculous patient has been assigned irrevocably and exclusively to the domain of the tuberculosis specialist. He is secluded in sanatoria; is removed, and is forgotten. Yes, he is the real "forgotten man" of medicine. The amount of material available for school instruction is small and unsatisfactory. A few patients are seen by the students in the Out-Patient Department of the hospitals, or in the general school clinics. From such sources the students cannot gain even an approximate concept of tuberculosis. The situation would be far different if tuberculous patients were admitted to the general hospitals. Then in their ward walks the students would have opportunity to study "T.B." cases in detail, to watch the various phases of tuberculosis, and to gain a coherent and sequential conception of tuberculosis. The teacher of diseases of the chest would have ample material at his disposal, and would not be obliged to call upon the imagination of his students, a barren and ineffective procedure at best, and certainly not in line with modern tenets of clinical teaching.

Tuberculosis is a disease where the nursing is often half the cure, and it is a ticklish angle.

Commenting further from Dr. Goldberg, from the point of view of the nursing problem, the admission of tuberculous patients to general hospitals is advisable from several different angles, as admission of such patients would imply better general training for the student nurses. Contemporary nurses, graduated from the general hospitals today, have very little knowledge of tuberculosis nursing. Actually they do not know really how to care for the tuberculous patient. Certain features in the psychic aspect and personality of the tuberculous patient can be learned only by experience. The knowledge gained in nursing the tuberculous is valuable, and should form an important part in the final equipment of the nurse who proposes to do general work. There are a few such heroic women left—not all are specialists.

Again the tuberculous patient in the general hospital would receive better nursing care at less expense. In most large sanatoria, the number of nurses per patient is inadequate. In the general hospital, with a rotation nursing program, and with the services of student nurses available, the patient could have the benefit of a thorough routine of nursing care.

From the standpoint of diagnosis alone, the admission of tuberculous individuals to general hospitals is eminently advisable. In the early stage tuberculosis, at times, offers an almost insuperable diagnostic problem. Careful observation and study, supplemented by conscientious laboratory work over a period of time, alone will determine an accurate diagnosis. It is obviously unfair that a patient should spend this period of time (necessary for diagnosis) in a tuberculosis hospital. The patient once admitted to such an institution feels that he is branded. He is a "sanatorium case"; his friends know it, and from time to time, perhaps unconsciously, remind him of it.

For these reasons, many patients in the "doubtful column" are unwilling to enter sanatoria for "observation." Such patients, as a rule, make no difficulty about entering a general hospital. They are quite willing to spend the time necessary, submit themselves to the necessary examinations and laboratory procedures. If proved nontuberculous, they leave the institution "without stigma," as one may say. If they were proved definitely tuberculous, later, depending upon circumstances, they can be transferred to a tuberculosis institution. Most tuberculosis workers feel that an observation ward in a general hospital is a distinct advantage to the patient, to the profession and to the community.

Installation of a tuberculosis department in a general hospital tends towards concentration of tuberculous individuals in one section. Today many hospitals accept tuberculous patients notwithstanding their avowal that they refuse to accept such cases. They accept them, in most instances, unconsciously. They come in under erroneous diagnoses and are allowed to remain in the wards, sometimes over a prolonged period. Sometimes, as the diagnosis is made, it is difficult to have the patient immediately removed; usually, however, the cases remain unrecognized owing to the fact that the staff is

not on the alert for the insidious forms of tuberculosis, and owing to the lack of facilities for consultation. This condition would not hold if an energetic tuberculosis division were operative in the same hospital building. Such a division, as part of its function, would exercise supervision throughout the institution, weed out the tuberculous individuals from the general ward, and place them where they could have correct tuberculosis supervision.

"Now is there any reason why the general hospital *should not* care for the tuberculous patient?" asks Dr. Goldberg. In answering his question he continues, "*There is no reason, granted proper conditions and proper management, why the tuberculous patient cannot be cared for in the hospital.* Under improper conditions and poor management, *such a course is definitely inadvisable*, and even dangerous. No one will advocate the admission of open cases of tuberculosis to the promiscuous and rather crowded environment of the large general ward. Patients debilitated from other chronic conditions should not be subjected to the possibility of a tuberculous infection. *This possibility must be absolutely and finally ruled out before we can even dare to consider the proposition.* Yet suitable arrangement and conscientious supervision and management, will eliminate even a remote possibility of house infection.

In a broad way, and from the long distance standpoint, any tuberculous individual might be properly treated in a modern general hospital. Certain types of cases, however, are more in need of hospital treatment than others. A short survey of this phase of the matter may be of interest.

Hospital treatment is at times specially indicated for

The Suspect Case. The advisability of a brief period of hospital stay, tending to confirm or eliminate a diagnosis of tuberculosis, is apparent.

The Case for Whom One or Other of the Various Surgical Procedures is indicated. In the future, perhaps, patients needing thoracoplasty and phrenectomy will be cared for in the general hospitals. In cases such as these the expensive operating room equipment must be considered as duplication even in the case of large institutions. Better cooperation between the hospital and sanatorium tends largely

towards eliminating expense. A patient in need of surgical treatment for tuberculosis may return to his home after a brief period of hospital residence. This procedure will release a bed in the sanatorium for a patient who may be badly in need of sanatorium routine.

The Patient Who Awaits Admission to an Institution is One for Whom Segregation is Indicated, particularly, in the open case in contact with children. In order to protect the children this patient should leave his home. It is only fair that the community which compels him to give up his home and family life, should provide him with a place to stay until such time as he may be admitted to the sanatorium.

Then there is *The Patient for Whom no Sanatorium Facilities are Available*.—In some communities, there are no sanatorium accommodations. In such communities, it is only reasonable to advocate that a wing for the care of tuberculosis be added to the general hospital.

The day of institutional isolation is past. Today the tendency is toward cooperation and coordination of all institutional facilities in the specific community.

WITH APOLOGIES TO DOCTOR WESSEL

In the July Journal, page 13, proceedings of the House of Delegates of the Illinois State Medical Society, the resolution "fees for surgical services as rendered at state institutions" was wrongly credited to Dr. W. F. Schroeder, Rock Island. The authorship of this resolution as well as its introduction into the House of Delegates belongs to Doctor Perry H. Wessel, of Moline.

EFFICACY OF QUINIDINE IN MALARIA

J. P. SANDERS, Caspiana, La., and W. T. DAWSON, Galveston, Texas (*Journal A. M. A.*, Nov. 19, 1932), confirm the antimalarial efficacy of quinidine. Trial of the drug in total of fifty-seven cases of malaria with positive smears in a country practice in Louisiana in 1930 and 1931 has revealed no inferiority to quinine. Of these cases, thirty-three were benign tertian and twenty-four estivo-autumnal. A 10 grain dose (0.65 Gm.) of quinidine sulphate once daily about three hours before chill time rapidly removed the acute dangers of malarial fever in all cases. The same dose once daily for four days was effective and did no harm in two pregnant patients. Quinidine is recommended for trial as a quinine substitute in cases of asthmatic, coryzal or urticarial reaction to quinine, or in cases of malaria in which the response to quinine is poor.

WITNESS WHAT FREE MEDICINE HAS DONE IN DETROIT, WHERE AS IN OTHER PARTS OF THE STATE OF MICHIGAN THERE HAS BEEN MUCH MEDICAL ECONOMIC EXPERIMENT.

Doctor, consider this. Banker, stop and ponder. Merchants, what if you dealt in medicine?

If you can get your body made well and physically pliable for nothing, why can't you get shelter for that body, food to nourish it, and clothes to cover it for the same paltry price?

In other words, *free medical service*, handed out indiscriminately and by *social workers* whose generosity emanates from *taxes* or *levies* upon other persons' pockets instead of their own, is the first and longest stride towards the *devastation by dole*.

After free food, one of the first free items of life for which the communist howls is a free doctor.

Every doctor in the land should witness what "free medicine" has done in Detroit, where as in other parts of the state of Michigan there has been much medical economic experiment.

Reliable figures secured in Detroit show that: Nearly three years ago a summary of the facts demonstrated that 50 per cent of the medical cases in the community were being cared for at the expense of the taxpayer. The clinics supported from charitable donations gave clinic and dispensary out-patient service to 77,183 sufferers, real and imaginary; and these treatments included 330,507 calls. On top of this, the Detroit Department of Health, directly tax-supported, treated 77,794 patients, including 251,838 calls; and at Receiving Hospital, also directly tax-supported, there were 18,461 patients and 82,184 calls. These mounted to a literally grand total of 171,136 patients and 670,088 calls! *About half of the medical cases treated in metropolitan Detroit in 1928 were looked after by clinics maintained by charitable funds, supported by tax-payers, and by tax-supported clinics.* The condition has grown with the dole. It will grow still further, until it becomes obviously intolerable. And then, change will be too late.

Dr. J. Milton Robb, President-elect of the

Michigan State Medical Society, declares that unless this medical dole is stopped, the dole for every detail in life is more imminent than is dreamed of by the average citizen, and hundreds of doctors with vision concur most heartily in this opinion.

There is no doubt but that free medical and hospital care is a great developer of an attitude of pauperization. Sympathy for the humanities has made of charity the camel within the tent.

Often patients who are on the town go into hospitals for any minor illness and finally manage to have everything from major operations down performed on them at somebody's else expense before leaving the hospital.

Dr. Robb writes feelingly. He says in part:

"Medical service is a commodity, worth money. The doctor is exempt from none of the expenses of living and bears some that are inherent in his profession. Rent, equipment and medicines all cost him money, to say nothing of the fact that he is obliged by the nature of his calling to live according to certain standards that are also expensive.

"We have the spectacle of institutions erected with the proviso that the donor will put up the building if someone else—the taxpayer—will equip and operate it. If some of these institutions were more nearly actual 'monuments,' so built that no one could by any possibility get into them, the world would be just that much better off. Philanthropists would do well to consult medical experts on design and equipment, whether the donor or someone else is to pay for them or part of them.

"Plenty of our Detroit patients balk at the idea of being made 'paupers' in connection with their medical treatment and surroundings. The only respect in which they are willing to be paupers is that they decline to pay for what they get. The surroundings are oftener than not so far ahead of the homes from which some of the impostors come that it is little wonder that they prefer the hospital to the home. The percentage of bath-tubs, though almost always unused, is considerably higher in the hospital. Honestly, patients on charity want better conditions than I would dare to ask for members of my own family. A Rolls-Royce type of treatment is insisted upon by men who could only afford a bicycle if they had to pay for it themselves.

"Maternity cases, one would think, might come under a different category. Not at all. They form one of the most aggravated forms of abuse of philanthropy. One woman on record holds the trophy with 23 births and the end is not yet. Her outspoken philosophy is: 'Someone's got to take care of it; I can't.' Maternity treatments are free to the irresponsible or the vicious mother—but how about the taxpayer? Less easy money, in the form of free care, might help reduce the birth rate of undesirables. This is not a hard-boiled statement, it is nothing but the application of common sense to a condition that has already reached the point of intoleration."

"As at present constituted, the existence of free medical treatment strikes at the very foundations of the nation. It is not alone that the money of the taxpaying citizen is being wantonly wasted. That is bad enough, in all conscience. But deeper and more perilous is the fact that it heads the people of the United States to a general condition of pauperism in their attitude to life. The free medical dole is only the beginning. It leads inevitably to the general and all-embracing dole, in which the self-respect withers and the sense of shame disappears."

"From a familiar experience with conditions as they exist, it can only be said that the present system of free medical treatment and attendance constitutes a menace, the seriousness of which it would be difficult, if not impossible, to over-estimate."

What applies to Detroit applies to every community in the land. The parasites, thanks to misguided philanthropy, spend more of the taxpayers' monies than the taxpayers spend on themselves. Unless this tendency is stopped the certain revolt will be chaotic and uncheckable.

Doctor, don't lend your help to "Free Medicine" as communism's flagbearer.

NO TWO COUNTRIES USE THE SAME YARDSTICK IN MEASURING MATERNAL MORTALITY STATISTICS.

Maternal mortality is a never ending point of argument and probably will hold interest so long as human beings are born and die.

It is unfair though for proponents of state medicine to keep harping on the premise that is as false as it is frequent that the United

States is afflicted with the highest maternal mortality figures in the world. This is not true. In the first place there is no common denominator or basic formula of statistics that enables a proper comparison of maternal mortality statistics between any two countries in the world. Until some clearing house for statistical rules is evolved the matter stands to be as vexatiously problematical as "How old is Ann?" or "Which comes first, the chicken or the egg?"

Sane statisticians realize this, let the socialists rave as they may.

In his *International Studies on the Relation Between the Private and Official Practice of Medicine*, Sir Arthur Newsholme points out that international comparisons are not dependable because of the great variation that exists in different countries. "In developing such statistics it is possible to discover considerable differences in puerperal death rates which do not correspond with real differences. The practices in England and Scotland do not differ markedly, but those in the Netherlands and in the United States differ greatly from those in England and Scotland. The international position is somewhat chaotic and it is doubtful whether the chaos could be removed by the adoption of a rigid and detailed international system of rules, since so much is depending on the personal bias of the statistician responsible for relegating a dubious certificate embodying more than one item to its right compartment."

Dr. Robert J. Lowrie indicates "the serious character of the difficulty of properly evaluating death certificates involving puerperal mortality in this country. Not every death certificate on which there is mention of pregnancy or childbirth can count as a maternal death, because pregnancy and childbirth are frequently complicated by cardiac disease, hyperthyroidism, tuberculosis, syphilis and similar complications. Reports of cases are available in which a fever appearing post partum was associated with the appearance of congestion of the lungs in a patient with a long history of tuberculosis. The question as to whether the fever was due to puerperal sepsis, pneumonia or recurrent manifestations of tuberculosis involved a decision too delicate to be shown adequately on the death certificate.

"Our present method of determining maternal mortality rates is quite inaccurate and I

beg to offer a new system which is of interest.

"In this the analysis of the technic involved is a matter for biometricians. Impossibility of accurate comparisons between maternal mortality rates in various countries, in individual communities in the same country, in hospitals and in general practice is evident. Proper prenatal care and adequate obstetric care will lower greatly the mortality and morbidity rates in any group."

For the time being at least it would seem better to devote ourselves to results rather than to statistics.

THE EFFECT THE NEW SALES TAX LAW WILL HAVE UPON PHYSICIANS.

A large number of inquiries have been directed to THE JOURNAL office as to what effect, if any, the new retailers "Occupation Tax," more familiarly known as the "Sales Tax," will have upon physicians.

We are in receipt of the rules and regulations issued by the Department of Finance of the State of Illinois. Special Rule 19 would make it appear that physicians prescribing their own drugs would be subject to making a return under the retailers occupation tax act.

We quote Special Rule No. 19 in full:

SPECIAL RULE NO. 19

PROFESSIONS, INCLUDING OPTICIANS AND OPTOMETRISTS, PHYSICIANS, DENTISTS, ARCHITECTS, ARTISTS AND VETERINARIANS

Persons engaged in the professions of and known as opticians and optometrists, physicians, dentists, architects, artists and veterinarians are included in the provision of Article 6 of the General Rules and Regulations issued by this Department. They render service. Sales to such persons of such tangible personal property as they may use or consume incidentally to the rendering of such services are "sales at retail," within the meaning of the Act.

Where members of these professions enumerated above, sell tangible personal property to purchaser for use, they come within the Act as to such sales.

CONVALESCENT POLIOMYELITIS SERUM IS AVAILABLE

The State Director of Public Health calls attention of the medical profession to the fact that convalescent serum for treating pre-paralytic cases of poliomyelitis is available upon request of physicians from the State Depart-

ment of Public Health. Due to the fact that it is difficult to obtain this serum in quantity physicians are requested to ask for serum only for immediate use. The available supply is too limited to undertake to provide physicians with serum for anticipated requirements.

While the value of convalescent serum has been questioned lately by physicians whose opinions are worthy of respect, all of the experience in this State has been favorable and it appears to be the general practice among the more progressive physicians and health officers to use the serum in indicated cases.

Arrangements have been made to receive and give prompt attention to requests for serum at any hour of the day or night throughout the poliomyelitis season.

Recently the prevalence of the disease has manifested a strong upward tendency. While as yet there are no indications of outbreaks of large magnitude it is highly probable that the next six or eight weeks will bring a substantial number of cases that may affect 100 or more persons.

ADVERTISING SOLICITORS WANTED

The ILLINOIS MEDICAL JOURNAL desires in Chicago and in each of the principal cities in the United States solicitors, preferably persons with medical advertising experience. No guaranteed salary. Compensation solely on commission basis.

ILLINOIS MEDICAL JOURNAL

185 N. Wabash Avenue, Chicago, Illinois

FREE EXAMINATIONS FOR TUBERCULOSIS AT STATE FAIR

The Sangamon County Medical Society and the State Department of Public Health have arranged to make free tuberculin tests and X-ray examinations on a limited number of children at the Illinois State Fair, August 19-26. This project is undertaken as a demonstration in the use and value of the Mantoux skin test and the X-ray in the early diagnosis of tuberculosis.

Children between 5 and 16 years old, whose parents or guardians so request, will be accepted for the test and the examination. Children brought to the fair for the test will be pro-

vided with admission tickets to the fair grounds and asked to return two days later for a reading of the test. It is the plan to immediately take X-ray pictures of those with positive tests. It it to be emphasized particularly that a positive test does not necessarily mean active tuberculosis.

Physicians of the State are invited to send to the fair any of their patients whom they wish tested and examined.

EVERY ONE IS PRESCRIBING

A. E. H., in the *Journal Lancet*, July 15, makes the following timely comment:

Physicians themselves are to blame in a certain measure for the innumerable persons practicing medicine.

Technicians of various kinds, nurses, druggists, barbers, beauticians, athletic directors and shoe clerks are practicing medicine. At social functions, every day, advice is given and prescriptions are passed around by lay persons, even in the presence of members of the profession—everyone is practicing medicine. And how they delight in telling about it!

Large and successful industrial corporations, banks, institutions of learning and public utility companies have organized "health services" and "welfare departments" wherein employees and students receive actual medical care at any time they apply whether a physician is present or not. In some cases its humble beginning is a "rest room" presided over by a pay-toilet-qualification attendant who carries aromatic spirits of ammonia, aspirin, sal hepatica, unguentine, iodine and bandages as an interesting and ever increasing sideline. Then along comes a case of asphyxiation and contact is made with the resuscitation squad of the fire department and so on and on without interference.

Physicians are to blame for their attitude of tolerance. Proper allowance should be made for emergencies, but surely much of this is neither necessary nor right and the question properly arises if and to what extent the profession should tolerate this condition. Moving picture operators are not imposed upon in like manner. A profession committed to free services for those who cannot pay should first of all be able to distinguish between charity and imposition.

Correspondence

HAVE YOU INSTRUMENTS OR OTHER ARTICLES THAT HAVE A MEDICAL HISTORICAL BACKGROUND?

July 25, 1933.

To the Editor: The enclosed letter was received from a prominent citizen in Petersburg, Illinois, and it seems to me that it would be a fine thing to publish it in the *Journal*, asking that any physicians who have any instruments or other contributions that have a historical background, who would be willing to loan them to the Allen cottage at New Salem, to get in communication with either Mr. Frackelton, at Petersburg, or myself.

It may be of interest to know that the State of Illinois is going to considerable expense in rehabilitating New Salem so that it will be as nearly as possible the same as when Abraham Lincoln lived there. Thousands of tourists a year visit this interesting place, and I am quite sure that the medical profession of the State will aid in any way they can to make it an additional point of attraction.

Yours very truly

J. R. NEAL, M.D.,

Chairman Legislative Committee.

The following is the letter sent to Dr. Neal:

July 18, 1933.

Dr. John R. Neal,
President of the Illinois State Medical Society,
Springfield, Illinois.

Dear Doctor:

Among the cottages to be furnished in the restored village of New Salem are those which were occupied by Doctors John Allen and Reignier. Doctor Allen married a sister of Dr. Charles Chandler, who laid out the village of Chandlerville and after whom it was named.

The Allen cottage at New Salem was among the more pretentious in that small community and consisted of three log rooms with a large fireplace. There was a small bedroom, a living room and a room Dr. Allen used for his office. These rooms are to be furnished with appropriate things such as were in use one hundred years ago, and suitable things are being sought wherever they can be found. Any contribution will have its history and the name of the donor

attached to the gift and will be kept under lock and key and shown to visitors only when accompanied by an authorized guide. Any family heirlooms of that period will thus be kept with more care than possibly they have now. They will preserve the name of the donor and the history of the gift, at the same time helping this and succeeding generations to visualize the home surroundings of Abraham Lincoln and his neighbors at New Salem.

It has been suggested that among the doctors of Illinois, there may be found instruments, books, medicine containers, office fixtures and furniture dating back to that time, with which they would like to help furnish an office formerly occupied by an honored and successful man of their own profession, whose influence upon young Lincoln is said to have been very helpful.

A grandson of Dr. Charles Chandler, C. C. Frackelton of Petersburg, Illinois, is Chairman of a Committee having in charge the furnishing of the Dr. Allen cottage and would be glad to correspond with anyone wishing to donate any suitable article for this purpose.

I am writing this letter to you at the suggestion of Dr. Elmer E. Hagler, with whom I had some conversation and who thought the appeal would meet with a ready response from the members of your association.

Yours truly,
C. C. FRACKELTON.

THE CURABILITY OF DERMATITIS REPENS

Chicago, Ill., July 5, 1933.

To the Editor: In the ILLINOIS MEDICAL JOURNAL of July, 1933, on Page 59 a doctor in referring to my paper on "Dermatitis Repens" (Ill. Med. Journal, May, 1933) states that he "cures this trouble in one sitting." His treatment consists in snipping off the raised epidermis with sharp curved scissors and in applying a wet boric acid dressing for 48 hours over the denuded area, and this in most cases cures the whole thing.

It seems to me that the doctor has a wrong conception of the pathology and clinical course of dermatitis repens. A review of the Litera-

ture on the subject will convince him that his treatment has been tried and failed and even amputations of the toes or fingers failed to stop the eruption. In fact a number of dermatologists are of the opinion that dermatitis repens is never cured.

I was reluctant to call even my case dermatitis repens, but since the affection was of six years duration, and had persisted in spite of all forms of therapy including snipping of the loose epidermis at the edges and boric acid fomentations, and since a number of competent dermatologists agreed with my diagnosis I was emboldened to report my case.

What the doctor calls dermatitis repens is undoubtedly a ringworm infection or some other superficial bacterial vesicopustular infection. A more careful rereading of the literature especially the excellent paper by Barber and Eyre (Brit. Journ. Derm. 39:485, 1927) will convince the doctor that what he calls dermatitis repens is some other condition, and that he probably was fortunate enough not to have come across in his practice a true case of dermatitis repens.

S. J. ZAKON, M.D.,
185 N. Wabash.

THOSE WHO HAVE CONTRIBUTED TO THE SUPPORT OF HOSPITALS ARE APPRECIATING MORE THAN THEY HAVE IN THE PAST THE VERY SERIOUS ECONOMIC PLIGHT IN WHICH OUR HOSPITALS FIND THEMSELVES

AMERICAN HOSPITAL ASSOCIATION
CHICAGO, ILL.

July 12, 1933.

To the Editor: I want to particularly express my appreciation, and in this I speak for a very large portion of the hospital field, of your editorial in the July issue of the ILLINOIS MEDICAL JOURNAL, on hospitals. As a matter of fact not only hospital people but those who have contributed to the support of hospitals are appreciating more than they have in the past the very serious economic plight in which our hospitals find themselves. The interests of our hospitals and of the medical profession closely parallel each other and it is both stimulating and

encouraging to know the attitude of the best minds of the medical profession toward the hospitals.

The American Hospital Association has taken and held a very steadfast position in its efforts to maintain our institutions upon a very high plane of professional efficiency and ethical concepts. Perhaps more than the medical profession, our hospitals have to battle against the intrusion of those practices into our hospitals which both our institutions and the medical profession condemn. They have to fight constantly the evils that attend commercialized free clinics and even the attitude of some of our recognized medical schools and hospitals, particularly in the vicinity of Chicago, that continue policies as inimical to good hospital care as they are to good medical performance.

There seems to be little doubt but that as a whole the country is over-hospitalized, and with 200,000 hospital beds constantly vacant, 145,000 of which are in our voluntary hospitals, we are now witnessing the insistent demands of hundreds of communities for funds, through the N. I. R. A., to help in the construction of *new hospitals to be tax-built and tax-supported*, to provide free care, both hospital and medical, for a larger number of people, many of whom could provide, if they were provident, sufficient funds to pay at least the cost of their medical service to the physician and their hospital care to the institution.

If permitted to run unopposed these requests, if granted, will produce a situation similar to and perhaps more critical in its dissipation of public funds unwisely and unnecessarily than the unlimited building of government hospitals for the care of the veterans, until it was brought to a halt.

The American Hospital Association has sent the attached telegram to President Roosevelt, Miss Perkins, Secretary of Labor; Mr. Ickes, Secretary of the Interior; Hon. William Green, president of the American Federation of Labor; Hon. Louis Douglas, Director of the Budget; Gen. Hugh S. Johnson, administrator of the Federal Emergency Act; Col. Donald H. Sawyer, and Admiral Richard Byrd, chairman of the National Economy League. For the past two days we have had a committee in Washington composed of Drs. F. A. Washburn, N. W. Faxon, A. J. Lomas, S. S. Goldwater, Hon.

R. P. Borden, and Fathers Griffin and Schwillalla, presenting our arguments in opposition to the wholesale distribution of funds for the erection of new hospital facilities.

Again permit me to thank you for your fine editorial in the July issue of *THE JOURNAL*.

BERT W. CALDWELL, M.D.,
Executive Secretary.

COPY OF TELEGRAM

The American Hospital Association, representing through its institutional and personal membership voluntary and tax-supported hospitals with 600,000 beds, regards the efforts that are being made to obtain large Federal grants to support extensive programs for the construction of municipal and county hospitals as a serious threat to the future of the voluntary hospital system.

There are at present 65,000 vacant beds in government owned hospitals and 145,000 vacant beds in our voluntary hospitals. These vacant beds are sufficient to take care of the peak load of patients to be hospitalized if the load were evenly distributed.

The construction of new hospitals and their operation, would create a new and permanent tax burden upon communities already provided with ample hospital facilities. The permanent addition of this load to local tax requirements is unwarranted and unwise.

If the many thousands of patients normally employed at modest wages and normally cared for in voluntary hospitals are to be provided for in new buildings erected by tax-supported hospitals, assisted by Federal grants, these patients will probably remain charity patients permanently even when remuneratively employed.

The wise course for the Federal Government in the present emergency is to restore the old balance between voluntary and public hospitals, and instead of creating new tax burdens upon communities by providing Federal grants, for new hospital constructions, to utilize the 210,000 vacant hospital beds by placing emergency funds at the disposal of both voluntary and tax-supported hospitals, to defray all or a part of the unusual demands for free care of the indigent and unemployed sick, which demands are of a temporary nature.

The great mass of intelligent workers does not want to be forced to accept permanent classification as indigent sick, and to be cared for at the public expense as paupers.

The American Hospital Association urges Federal authorities, States, Counties, and Cities, medical associations, and organized labor to adopt this principle and to discourage additions to public hospitals which will not be permanently utilized or required unless many existing voluntary hospitals are eventually abandoned.

Night letter July 12 to:

President Franklin D. Roosevelt

Hon. Wm. Green, President, American Federation of Labor

Miss Frances Perkins, Secretary of Labor

Hon. Harold L. Ickes, Secretary of Interior

Gen. Hugh S. Johnson, Administrator Federal
Emergency Act
Hon. Louis W. Douglas, Director of Budget
Col. Donald H. Sawyer, Department of Interior
Admiral Richard Byrd, Chairman National Econ-
omy League

WHY MANY HOSPITALS ARE ONLY PARTLY OCCUPIED AND ARE FINAN- CIALLY BROKE OR NEAR BROKE HAS NOT BEEN EMPHASIZED

Chicago, Ill., July 12, 1933.

To the Editor: Permit me to congratulate you upon the several special "editorials" in the July number of the ILLINOIS MEDICAL JOURNAL, particularly the one dealing with the seriousness of the situation confronting hospitals.

Each issue of THE JOURNAL carries valuable and pointed articles from your pen, but it seems to me that the recent July number has contributions of greater than usual timeliness and importance. We members, indeed, are indebted to your unselfish and vigorous fighting of our social, ethical and economic battles. Doubtless many physicians do write you, but my added words will do no harm.

It appears to me that one phase of why many hospitals are running about thirty per cent occupied and, financially, are "broke" or "near-broke" has not been emphasized.

With very few exceptions, our hospitals in Chicago and throughout the state are so chartered that they *may not refuse the admittance of any non-contagious patient, sent in by any reputable, licensed practitioner of medicine.*

In theory this is proper but in practice it does not work. In Chicago, the majority of hospitals have "staffs," organized more or less for efficient intra-mural work, but very efficiently organized to "protect their lairs." So, even though these hospitals may be occupied but thirty (or less) per cent by paying patients, through the influence of the "staffs," time after time and day after day, the business offices turn away patients proffered by men of repute and ability.

Patients, not rarely, suggest to their physicians that they would like them to treat them in such-and-such institutions, yet, if their physicians be not on the "select list" of those hospitals, the patients must be urged to go elsewhere or, if they persist in their desires to go

to the hospitals of their choices, then their own physicians may not have them admitted or treat them there. The same patients readily are admitted to the hospitals in question if the patients' regular physicians transfer them to the so-called "staff" physicians!

Such attitudes of hospitals and their "staffs" rob hospitals of patients, foster hospital staff chauvinism and, besides being illegal, unfair, unethical and unsportsmanlike to reputable physicians, not uncommonly injure the reputations of those physicians: patients are apt to draw conclusions that if their own, regular medical attendants may not treat them in the hospitals which they, themselves, select, then their physicians are below standard. And yet, in those same hospitals may be practicing men who have been assistants or pupils of the physicians discriminated against or men who have very little background, socially, professionally or ethically.

One day a "test case" of this discriminating practice of hospital "staffs"—it's not the business office which is to blame—will arise and when it does, there will be a real rumpus in the hospital situation in Chicago.

FRANK SMITHIES, M.D.

AESCULAPIAN SYMBOL OBSOLETE

Inglewood, Calif., July 1, 1933.

To the Editor: The Symbol of Aesculapias, the so-called insignia of the medical profession, dates back in its origin to the "Age of Fables." Mythology claims it as one of the emanations of the fertile imaginations of the fictionists of ancient pagan Greece.

It is related in these ancient fables that one Aesculapias, the god of medicine, carried a staff or rod around which was entwined a serpent, hence the "insignia" of the medical profession. It is also related that Hermes (Mercury) who was a brother of Apollo (the father of the great, mythical physician, Aesculapias) and who was the messenger of the gods, also carried a rod around which was entwined two serpents. This "Wand of Mercury" or "Caduceus" as it was called, is sometimes erroneously used as the insignia of the medical profession.

Just what relation the "Symbol of Aesculapias" and "The Wand of Mercury" bear to each other, or just what the significance of the rod and the serpent was, is not within the prov-

ince of this article to attempt to explain. Suffice it to say that if the Aesculapian symbol ever did in any way symbolize the ideas and ideals of the medical profession, then, that day has long since passed.

Exactly what there is about a loathsome reptile, with its body coiled ready to spring and its poisonous fangs bared ready to strike, that is in the least symbolic of modern scientific medicine, utterly beggars the most acute imagination. Indeed, if it is not the very antithesis of every idea and ideal associated with modern scientific medicine—then—well, then, things “Ain’t what they seem” and it is perfectly allowable to teach the “Risin’ generation” that “There ain’t no sech thing as evolution.” As well symbolize the American Red Cross by a scorpion, or represent, symbolically, the Christian religion by a porcupine.

The economic stupidity of the medical profession, its un murmuring willingness to bear the burdens of humanity, and its stubborn resistance to clearly indicated changes might well be symbolized by a donkey. Too, its lack of ability and willingness to organize and fight for its legal, social, and economic rights, could be aptly represented by the bobbing cotton-tails of a bevy of rapidly departing frightened rabbits, but to attribute any of the qualities or qualifications of modern scientific medicine to a slimy, poisonous snake, with its clammy, repulsive body entwined about a meaningless stick, is too utterly and absolutely ridiculous for words to express.

The fact that many physicians do not even know the name of this so-called insignia; the fact that few physicians have any knowledge of or care anything about the origin or significance of this emblem; the fact that it is a rare thing, indeed, for a member of our profession to use it on his literature or his name-plate; and the fact that “Trade Journals” only use it to identify them with the medical profession, is ample proof that it is not a true or desirable emblem to symbolize modern scientific medicine.

Modern scientific medicine has reached that place in its development when if it is to attain to that usefulness of which it is capable—*two things must happen*. First—It must consolidate and become that fraternity, in reality, which it is now commonly supposed to be but

which it is not, and—Second—It must be identified in the minds of the laity as a separate, distinct entity in contradistinction to those hangers-on of the healing art variously known as quacks, irregulars and pseudo-practitioners.

These two objects can be attained if the medical profession will adopt a suitable insignia, sign or emblem that is truly symbolic of its scientific ability, its high ideals and its noble calling. Every physician would then exhibit it on his car, on his literature, and on his name-plate; every medical magazine would feature it on its front page as a matter of course; and every layman would soon know—for the first time—whether he was calling on or calling up a doctor of scientific medicine or an ordinary quack.

This represents the greatest and most important forward step that modern scientific medicine could possibly take at this time.

To this end, therefore, I propose and urge that a liberal monetary prize be awarded for a suitable emblem that most accurately symbolizes modern scientific medicine. The expense in this connection could, most likely, be taken care of by philanthropy, but a small per capita tax on the members of the medical profession would seem more in keeping with the spirit that would be manifest in a movement of this kind. The officers of the American Medical Association could sponsor it and a committee that they would appoint could act as the final judge in the contest.

The psychology of an emblem to symbolize the ideas, ideals and activities of a fraternity, society or organization is well founded. Nearly every group in our country, from the most insignificant to the most powerful, has its sign or insignia which its members are proud to display and which serves to consolidate and identify its membership, but the great, modern, humanitarian, scientific, medical fraternity has *none*. We are a fraternity without a symbol; an army without a banner; a *nation without a flag*.

E. H. CRANE, M.D.

“My dear,” called a wife to her husband in the next room, “what are you opening that can with?”

“Why,” he said, “with a can-opener. What do you think I was doing with it?”

“Well,” replied his wife, “I thought from your remarks that you were opening it with a prayer.”

CHANGE OF NAME OF THE MEDICAL WOMAN'S JOURNAL

June 28, 1933.

With the June issue The Medical Woman's Journal became "*The Medical and Professional Woman's Journal*." The scope of its activities has been broadened to include the work of scientific women in allied fields. This step was taken after due deliberation and in accordance with the avowed aims of this publication, over a period of forty years.

During four decades the Journal has recorded the work of medical women throughout the world and from now on will endeavor to present the outstanding achievements, not only of women physicians but dietitians, dentists and women engaged in public health, all working towards the common end of health, happiness and welfare of women and children in these fields in which women are so well fitted to make noteworthy contributions.

With the June issue the Journal has been enlarged to 64 pages and cover, with a new design for same, a new dress of type, new department heads, and a most attractive make-up. The management points with pride to expansion at a time when many publications are struggling for existence; this expansion has been possible because of the loyal and continued support of medical women. The Journal has in the past been the only scientific monthly publication issued in the interests of women physicians throughout the world, so this enlarged publication will be, so far as the management knows, the only magazine reaching all these professional women under one cover.

INTO THE DISCARD

On the final day of its Session the Fifty-Eighth General Assembly swept into the legislative discard among others, the following bills:

SB 457—Osteopathic Practice Act

SB 458—Establishing a separate Osteopathic Examining Board

SB 542—Establishing a separate Examining Board for Naturopaths

SB 543—Naturopathic Practice Act

SB 566—Providing for a Special Examining Board for Physiotherapy Practitioners

SB 567—Providing for the Licensing of Physiotherapy Practitioners

HB 784—Chiropractic Practice Act

HB 785—Providing for a Special Examining Board for Chiropractors

HB 842—Osteopathic Practice Act

HB 843—Establishing Separate Examining Board

The Legislative Committee takes this opportunity to congratulate the members of the Chicago Medical Society and the Illinois State Medical Society on this result.

The Committee also thanks the members for their enthusiastic support in response to the frequent calls for concerted action.

"If it can be done in legislation, it can be done in economic protection."

THOMAS P. FOLEY, Chairman,
Legislative Committee.

C.M.S.B. 7-22-33

MEDICO-MILITARY COURSE FOR MEDICAL DEPARTMENT RESERVE OFFICERS

The medico-military course of inactive duty training for Medical Department Reserve officers, which has been held at the Mayo clinic during the past four years, will again be held this year from October 1 to 14, both dates inclusive. This inactive duty training will follow the plan so well worked out under the auspices of Colonel George A. Skinner and the military features will be under his personal supervision.

This type of military medical training is now well established and has proved its worth during the past four years. The course offers valuable and interesting training for the Medical Department officers of all the components of our national defense. The staff and faculty of the Mayo Clinic have again placed their unexcelled facilities at the service of their government in the interest of preparedness, and have extended an invitation to all the services to participate.

This short course is equally applicable to general practitioners and specialists. The morning hours are devoted to purely professional subjects selected by the student officers. The afternoon hours pertain solely to medico-military subjects and the evening hours are covered in a lyceum course of general interest.

Application for this course of inactive duty training should be made to the Corps Area Surgeon, Seventh Corps Area, Omaha, Nebraska.

Applications should state the character of the work the candidate desires to follow in the morning hours. All student officers are expected to attend and participate in the afternoon and evening sessions. Each applicant should fully understand that the invitation to accept this course of study without charge is extended by the Mayo Clinic; that the project is without expense to the Government; and that one hundred hours' credit will be given those who take and complete the course. While it is desirable to attend the entire course, those whose time will not permit this may join or leave at any time and will receive credit for the hours spent in training. Uniforms are optional.

SUGGESTED TOPICS FOR TALKS TO BE
GIVEN BY MEMBERS OF THE ILLINOIS
STATE MEDICAL SOCIETY BEFORE
LAY GROUPS—1933-34

MEN'S CLUBS:

1. Checking Up Your Body's Assets—"The importance of periodic physical examination."
2. The Business Man and his Stomach
3. Health Problems in Illinois
4. Some Health Problems Of The Middle Years—"A discussion of the diseases that endanger middle life, as well as of the general health habits to be followed at this time in regard to food, exercise, recreation, rest, etc."
5. How To Be a Great Grandfather
6. Animal Experimentation in Relation to Human Welfare
7. What Everyone Should Know About Cancer
8. Mind Health
9. Why Die So Young
10. Health and the Depression
11. The X-Ray, Searchlight of Medicine
12. Your Heart
13. Science and Superstition
14. Why Men Break Down between Forty and Fifty-five
15. Your Blood Pressure and Your Business
16. Venereal Infections
17. Prostatic Problems

WOMEN'S CLUBS AND PARENT TEACHER
ASSOCIATIONS

1. Health Problems in Illinois
2. The Hopeful Side of the Cancer Problem—"A discussion of the nature of cancer and an account of the latest knowledge on the subject."
3. Keeping Fit for Club Work
4. Sound Body—Sane Mind—"A discussion of the intimate relation between muscle and nerve and the necessity for recreational and diversional activities and

interests as a counteractant to the intensity of modern life."

5. Growing Old Gracefully—"As women reach middle age, sundry health problems confront them. Cancer, high blood pressure, nephritis, and heart disease need to be guarded against, and the less serious conditions such as excessive weight and the nervous adjustments necessary at this time, should receive attention."

6. Before the Baby Comes
7. Children and the Movies
8. Child Behavior Problems
9. The Relation of Health to School Work
10. Keeping Children's Diseases Away from your Children—"A discussion for mothers on how to keep their children well, including food, sleep, clothing, fresh air, cleanliness, etc."
11. The Difficult Problem of Growing Up—"Preparing the child for adolescence."
12. Health and Personality
13. How Medical Science Protects the Child
14. Men and Microbes
15. Health and The Depression—"Nutrition and Malnutrition."
16. Leisure Time or Recreation and Health
17. The Parent and Child Relationship
18. The Problem of the Crippled and Handicapped Child
19. X-Ray, The Searchlight of Medicine
20. Relation of Delinquency and Crime to Education
21. Child Guidance and Mental Hygiene
22. Contagious Diseases and Quarantine

HIGH SCHOOL ASSEMBLIES

1. The Story of X-Ray and Radium (Illustrated)
2. Health and Happiness
3. Heroes of Medicine
4. The Animals' Gift to Mankind
5. The Choice of a Career
6. Control Yourself
7. Ignorance, Accidents and Health
8. Mental and Physical Preparations for a Career
9. What Are Bacteria?
10. Temperance—"Not from the standpoint of alcohol or tobacco, but excess in any line as a health menace"

Request Speakers through the office of the Educational Committee, Illinois State Medical Society, 185 N. Wabash Avenue, Chicago, Ill. Telephone State 4415.

PACKAGE LIBRARIES

Libraries on the following subjects are available in the office of the Educational Committee, Illinois State Medical Society, 185 N. Wabash Avenue, Chicago.

Adolescence—Youth—Leisure Time
The Adolescent
Alcohol and Health
Animal Experimentation
The Baby
Behavior and Health
Birth Control
Blindness
The Blood
The Business Man and His Stomach

Cancer, Problem of
 Crippled Children
 Children, Feeding of
 Helping Your Child to be a Good Patient
 Children and the Movies
 Child of the Pre-School Age
 Child in School
 Child Welfare
 Child Play and Health
 Community Health
 Clinics
 Conquest of Children's Diseases
 Costs of Medical Care
 Diseases of the Chest
 Diphtheria
 Exercise and Health Education
 Eyes of the School Child
 Fair—Fat and Forty
 Fat and Thin
 First Aid and Home Nursing
 Friction in the Family
 Focal Infections
 Foods
 Food in Relation to Health
 Glands and Personality, The Romance of
 Goiter
 Growing Old Gracefully
 Habit Formation
 Health of the Adult
 Health and Beauty
 Health and Charm
 Health and the Depression
 Health Habits
 Health—High School Students
 Health Talk to High School Students
 Health as Related to the School
 School Training in Health
 Heart Disease
 Heroes of Medicine
 How Are You?
 Infant and Maternal Mortality
 Infantile Paralysis
 Immunization
 Making the most of Vacations
 Malaria
 Malnutrition
 Medical Economics
 Medical Education
 Medical Ethics and How to Choose a Doctor
 Medical Fees
 Medical Organization
 Medical Legislation
 Medical Problems
 Medicine and Religion
 Men and Microbes
 Mental Hygiene
 Mental Hygiene—Adults
 Middle Age
 Outwitting Middle Age
 Milk-born Diseases
 Nursery Schools
 Nursing

Obedience and Character
 Parent and Child Relationship
 Parents and Children
 Parents, Teachers and the School Child
 Pasteur
 Periodic Health Examination
 Physical Defects
 Physicians in Fields other than the Practice of Medicine
 Physicians, Income of
 The Physician and Public Health
 Pneumonia
 Postponing Old Age
 Posture
 Pre-Natal Care
 Preventive Medicine
 Public Health
 Public Health Outline for High School Students
 Punishment
 Quackery
 Radio
 Recreation and Health
 Rosenwald Foundation
 Rocky Mountain Spotted Fever
 Rickets
 Rural Health Problems
 Safeguarding our Children
 Safety First
 Sanitation
 Scarlet Fever
 Sex Education—Boys
 Sex Education—Girls
 Sight Saving
 Serums, Vaccines and Antitoxins
 State Medicine
 State Medicine and Sheppard-Towner
 Summer Camps
 Sunlight—Ultraviolet Light
 Surgery
 Teachers' Institutes
 The Teacher and the Mental Health of the Child
 Teeth
 Tonsils and Adenoids
 Tuberculosis
 Value of Health
 Venereal Disease
 Ventilation—Air—Water
 Vital Statistics
 Winter Diseases
 X-Ray, The

Keeper: "You think you're sane, eh? Well, if we give you your liberty will you keep away from liquor and women?"

Asylum Inmate: "I certainly will!"

Keeper: "Then you stay in; you're still crazy!"
 —Film Fun.

The only animal that has its full strength when one day old is white mule.

REPORT OF RETIRING PRESIDENT OF WOMAN'S AUXILIARY TO THE ILLINOIS STATE MEDICAL SOCIETY

Milwaukee, Wisconsin, June 14, 1933.

As retiring President of the Woman's Auxiliary to the Illinois State Medical Society, I wish to pay tribute to our late National President, Mrs. Walter Jackson Freeman, whose inspiration, counsel and guidance made it possible for me to outline my year's work with confidence in its consummation. May I also express my admiration for her successor, Mrs. James F. Percy, who courageously accepted the tremendous responsibility of National Auxiliary President, when the year was far advanced, without an opportunity for preparation. We feel that she has succeeded admirably in fostering established plans, and instituting valuable additional plans.

Illinois State work is primarily educational, legislative, and social although in a few outlying districts some philanthropic work is done. Many instances have been reported where individual members and County Societies have responded to the request from lay organizations to furnish speakers for health educational programs and for those pertaining to allied medical subjects. Under the direction of our Medical Society our members aided in the passage of a bill by the State Legislature regarding the compulsory use of silver nitrate or its equivalent to prevent blindness in new born infants.

This year Illinois Auxiliary has attempted to perfect the mechanics of its organization—all policies and problems have been referred to our Advisory Committee appointed by the President of the State Medical Society.

Our standing committees correspond with those of the National Auxiliary and we strive as nearly as possible to follow suggestions of the latter body.

State work has been carried on by an excellent Board of 29 women, which includes chairmen of Standing Committees. At the first mid-year Board meeting held in Chicago on November 18, 1932, 21 members answered roll call while 22 reported present at the following one held March 18, 1933. With such enthusiasm and cooperation, plus the support of individual members throughout the state, I am happy to report briefly as follows:

1. That all County Auxiliaries have Advisory Committees appointed by the respective County Medical Societies, and that Counties have conformed where practicable in forming Standing Committees to correspond with those of the state.

2. A paid membership May 15, 1933, of 500 members, an indicated loss of 59 members as reported May 16, 1932, but we estimate that 70 or more members will pay delinquent dues as soon as all banks open. This comprises 13 County Auxiliaries which leaves 79 County Medical Societies without Auxiliaries.

3. The establishment of a uniform County fiscal year, which is March 1, while that of our state is March 15, and the National is, of course, March 31.

4. The adjustment of County dues so that in the future all County Auxiliaries will follow instructions of the National Society to pay dues at the end of the

County Fiscal year. In order to accomplish this, three Counties paid no dues this year because they have been paying in advance, which arrangement, of course, curtailed the income of our State and National Auxiliaries.

5. The passing of a by-law at our Annual Session this spring, which provides that a new County Auxiliary shall pay a fee of \$1.00 to State Treasurer to receive representation through one Delegate at the first Annual Session following its organization, after which time it shall pay full per capita dues.

6. The formation of two new County Auxiliaries, Marion and Livingston, with memberships of 15 and 19 respectively.

7. The preparation of four programs and their distribution to County Auxiliaries. We do not use the National Study envelopes because so much material is available from the Educational Committee of our State Medical Society. This Committee is a highly organized department with a Chicago office where its Executive Secretary, Miss Jean McArthur, contributes generously of her time and ability in assisting us. Without remuneration our Auxiliaries may secure speakers from this Committee on a wide range of subjects for our own meetings or for those of lay organizations.

8. That we have secured our quota of Hygeia subscriptions, most of which have been given to public schools and libraries. Much interest in this project is manifested in many communities so this department indicates steady growth. Some of our Auxiliaries regularly collect members' copies of Hygeia and place them in public reading rooms.

9. The purchase of 2000 membership record cards from the National Auxiliary which were mailed to County Auxiliaries and are gradually being filled and returned to our Corresponding Secretary. These cards will be placed in a steel filing cabinet bought this year by the State Auxiliary, which, by courtesy of the Educational Committee of the State Medical Society is placed in its Chicago office. Here also are filed our Archives material.

10. That 42 Handbooks were bought and mailed to members of State Board and to all County Presidents with the request that they be passed along to their successors. These handbooks were enthusiastically received and I recommended that each Auxiliary worker in County or State capacity secure one and study it.

11. The adoption of a suggested set of By-laws for new County Auxiliaries and for preliminary organization work, a copy of which is attached hereto.

Also the publication of State By-laws in pamphlet form and the distribution of copies to each member in the state.

12. The purchase of a die for a State President's pin and the presentation of pins to all four past Presidents as well as to the retiring President.

13. That for the first time our Publicity Chairman received a letter from the Editor of our State Medical Journal in which he stated that the Auxiliary pages had become a feature of the publication. Unlimited space is allotted us gratis. Articles appeared in each issue this year and press notices have been sent regularly to the National Chairman. Also a comprehensive

scrapbook prepared by our efficient Publicity Chairman is on exhibition at this Convention.

Our Medical Society cooperates fully in all Auxiliary enterprises. My year ended May 17, 1933 and my duties are now invested in the proficient hands of our new President, Mrs. Solomon Jones, who will terminate a highly successful administration in May, 1934, if she receives from her President Elect, Mrs. Lucious Cole, and her Board, the loyal support so cheerfully given me.

Respectfully submitted,

GRACE R. MUELLER (Mrs. E. W.)
1420 Elmdale Avenue,
Chicago, Ill.

AUXILIARY NOTES

The sixth annual session of the Woman's Auxiliary to the Illinois State Medical Society was officially opened Tuesday morning, May 16, 1933, at the Jefferson Hotel, Peoria, Illinois, by Mrs. Hugh E. Cooper of Peoria, who extended a cordial welcome to all visiting women. In behalf of the Entertainment Committee she requested everyone to attend the various social functions listed on the program.

Mrs. John R. Neal, Past President of the State Auxiliary, responded in her usual gracious manner with a few pertinent remarks stating that memories of the successful 1930 Peoria Convention made us happy once again to be the guests of the Peoria Medical Society.

The Convention Committee and the Board of Directors decided this year to experiment with the plan of holding two open Auxiliary meetings in order to allot sufficient time to various reports. Whether or not this plan proved satisfactory seems still to be a debatable question primarily because many members did not arrive early enough to attend the first meeting on Tuesday.

Officers, Councilors, and County Presidents reported on Tuesday. The reports of Standing and Special Committees were given on Wednesday. A steady, wholesome growth was indicated by these excellent reports which will be published in this Journal in succeeding issues. Unfortunately all Board Members did not register until late Wednesday but that morning before the election Mrs. Cole, the Credentials and Registration Chairman, reported as follows:

Voting members registered and having received badges:

Officers	5
Councilors	4
Chairmen of Standing Committees.....	5
Delegates	20
Alternate Delegates	4

38

The results of the annual election were published in the July Journal. Following the induction into office of the new Officers and Councilors, the President, Mrs. E. W. Mueller, of Chicago, presented the gavel to her

successor, Mrs. Solomon Jones, of Danville, with sincere wishes for a happy administration. Mrs. Jones then took the chair. With a few well chosen remarks Mrs. H. B. Henkel then presented a pin to each past President, all of whom were present except Mrs. T. O. Freeman.

At the request of the Peoria Entertainment Committee no Auxiliary program was arranged for the Wednesday luncheon. On that occasion, however, the Convention Chairman, Mrs. Henkel, introduced the retiring President, Mrs. Mueller, and the new President, Mrs. Jones. Mrs. Mueller took advantage of this opportunity to thank the several hostesses for their hospitality and expressed appreciation, in the name of the Auxiliary, for the delightful social functions which the Peoria Committees had planned. As a token of appreciation of her work, the Auxiliary presented Mrs. Mueller with a beautiful electric clock.

Next year the Auxiliary will meet again in Springfield to renew acquaintances and make new ones.

Mrs. Jones presided at the post Convention Board Meeting Thursday morning when Chairmen of Standing Committees were elected, and plans for the coming year were discussed.

AMERICAN CONGRESS OF PHYSICAL THERAPY

The twelfth annual session of the American Congress of Physical Therapy will convene at the Palmer House, Chicago, September 11, 12, 13, 14 and 15, 1933. September 16 will be devoted to hospital clinics, detailed announcements of which will be made by printed bulletin not later than September 15.

DO YOU BELONG TO THE "CLIQUE".

What is the Clique? 'Tis a body of men
Who attend every meeting, not just now and then,
Who don't miss a meeting unless they are sick—
These are the men that the grouch calls "The Clique."

Who don't make a farce of that magic word "work,"
Who believe in the motto—"Not a job will I shirk";
Who never resorted to an underhand trick,
These are the men that some call "The Clique."

The men who are seldom behind in their dues,
And who from the meeting do not carry news;
Who attend to their duties and don't seek a kick;
These are the men that the crank calls "The Clique."

We should be proud of members like these—
They call them "The Clique," or whatever they please,
But there are some people who always find fault,
And most of this kind are not worth their salt;

They like to start trouble but seldom will stick—
And leave all the work to be done by "The Clique."

—Reprinted from Radiology.

Farmer's Wife (to druggist)—"Now, be sure and write plain on them bottles which is for the horse and which is for my husband. I don't want nothin' to happen to that horse before the spring plowin'."

Original Articles

THE SURGEON'S DUTY IN CANCER OF THE CERVIX UTERI*

H. S. CROSSEN, M.D.

ST. LOUIS, MISSOURI

The treatment given patients with cancer of the uterus in any community is decided largely by the surgeons of that community. As it is common knowledge that this disease requires radical measures the patient is naturally taken at once to the surgeon. In the larger cities the patient may come under the care of some one making special study of pelvic surgery. In other places the full responsibility falls on those doing general surgery.

In every case the decision as to the type of treatment is a serious matter, for it may mean the difference between life and death for that patient. As surgeons we have a heavy responsibility to these patients, and this discussion is for the purpose of giving what aid I can to the effective meeting of that responsibility.

Cancer of the uterus has occupied a very large place in surgery, particularly that form of cancer occurring in the cervix. For a long period the knife was our only resource. And surgery scored one of its most brilliant triumphs in the successful radical operation for this otherwise fatal disease.

The technical difficulties due to the deep location of the growth and the extensive dissection necessitated by the cancer prolongations out into the parametrium and to the pelvic wall, combined to make the bona fide radical operation for cancer of the cervix stand out as one of the few most difficult and exhausting operations in the whole realm of surgery. But the result was worth all that it cost in the labors of anatomists and pathologists and surgeons, and in the exhaustion and danger to the patient, for it gave a chance for life to many persons who otherwise had no chance and no hope whatever.

My personal experience with this operation extends over a long period. In fact, I have credit for the first completed Wertheim operation in the St. Louis territory. And that patient, by the way, was cured, and is still living

after an interval of thirty years. Since that time I have studied and worked continuously to perfect myself in the technique of the radical abdominal operation and the radical vaginal operation for cancer of the cervix, and the lessons learned in practice I endeavored to preserve and transmit through text and illustration. Consequently, I approach the subject from the standpoint and with the viewpoint of the practicing surgeon.

It has been my labor and my delight to eradicate this disease with the knife, as far as such eradications could be accomplished. Hence I speak as a surgeon to surgeons. We are all confronted with the same serious problems in the handling of these patients. If I have had the privilege of concentrated study and experience in this particular division of surgery, it is incumbent that I pass on the lessons and conclusions from my experience.

STAGES IN TREATMENT

It is interesting and instructive to glance back over the stages by which the treatment of this disease advanced from absolute failure to the definite success and the increasingly hopeful outlook of the present day. I quote from a recent article.¹

"Some forty years ago the treatment of cancer of the cervix was just emerging from the stage of mistaken hope in the effectiveness of ordinary hysterectomy. A few years previously the brilliant success of surgery in other gynecological conditions had raised high hopes for the cure of this dread disease by the removal of the affected organ. Vaginal or abdominal hysterectomy was the accepted treatment. Large series of patients had been subjected to this supposed radical operation with excellent immediate results. But the lapse of time had brought revelations that were disconcerting. The large number of hysterectomized patients who had done so well at first, gradually disappeared by death from recurrence of the cancer. Year by year the mounting number of deaths in the early series raised ominous forebodings. Slowly but surely, in spite of reluctance to accept it and stubborn fighting against it, there came finally the realization that hysterectomy as then carried out was not a cure for cancer of the cervix. In one large series of operations not a single patient survived five years. In other series there was only an occasional survival. The high hopes built on early results had been completely overthrown, and the profession was back where it started with no cure for this disease.

"However, this harrowing experience was not without some beneficial results. It had demonstrated definitely that there was some unknown factor in the situa-

*Oration in Surgery read before the Illinois State Medical Society at Peoria, May 17, 1933.

1. Cancer of the Cervix Uteri: Some Pertinent Facts Concerning the Treatment. *Jour. A. M. A.* Vol. 99, p. 2149.

tion or some known factor that required much more serious study. In the attempts to determine the causes of failure of ordinary hysterectomy as a cure for cancer of the cervix, there developed one of the most brilliant and useful pieces of pathological work in the history of Medicine.

"The clear demonstration of minute non-palpable cancer-prolongations beyond the palpable involvement of the cervix and parametrium, showed why ordinary hysterectomy did not cure the cancer. Whether the prolongations were by continuity of cell-growth or by metastatic transportation of cancer cells to outlying glands, the result was the same, namely, recurrence. The problem then became clear. Some means must be found to destroy these outlying cancer cells, which were evidently present in practically every case when the patient came under observation.

"The main steps by which treatment of cancer of the cervix advanced from practical failure to the saving of about one-fifth of the patients treated, may be briefly stated. It was noticed that the occasional cure following the simple hysterectomy of those early days occurred most frequently when the cautery was used, especially low-heat cautery application. There was evidently something about heat that discouraged the growth of cancer cells and made cautery excision more effective than excision with the cold knife. Cautery incisions even through dense cancer would often heal superficially, the cancer cells evidently being killed more deeply than the tissue cells.

"This ray of hope was followed up, and the slow cautery excision of the cervix, with baking of the surrounding tissues, was developed. This cured a certain small percentage of early cases, which was a remarkable result considering the limited extent of the excision. However, the baking process was soon overshadowed by the developing radical dissection-operation."

The radical dissection-operation for cancer of the cervix was analogous to the radical operation for cancer of the breast, in which the adjacent lymphatic drainage system was removed along with the primary growth. Through this splendid radical operation for cancer of the cervix a considerable percentage of patients was saved, and this percentage increased as the operation was gradually improved.

However, notwithstanding prolonged study and the use of every improvement devised, the radical dissection-operation was handicapped by two serious drawbacks.

a. The primary mortality was very high. Removal of the parametrium containing the lymphatic drainage-area required prolonged extensive careful deep dissection, and the resulting operative and postoperative strain placed the life of each patient in marked jeopardy.

b. The field of effective operation was limited.

Only in the earlier stages of the process was there reasonable hope of cure by operative removal. Very soon the cancer cells penetrated to structures along the pelvic wall that could not be removed. In spite of notable efforts to extend the scope of operation and the splendid campaign for early diagnosis, there remained a large proportion of patients beyond the pale of operative relief.

These two serious defects in the program of cure by radical operation were recognized and appreciated by no one more than by the surgeons who were doing this work. While striving vigorously and conscientiously to give these patients every possible relief with the knife, they hoped and worked for something still better.

Along with the constant efforts to improve the technique and results of radical removal of the cancer with the knife, much study was given to another method of treatment, namely, devitalization of the cancer cells in situ. This world-wide search for a less dangerous and more widely applicable remedy brought out many so-called "cures." Time and time again the profession was carried to the pinnacle of hope, only to be dropped to bitter disappointment. The repetitions of this process naturally made surgeons very critical of new remedies for cancer. Radiation, like other proposed remedies, had to meet this healthy spirit of skepticism and analysis, which constitutes the cancer patient's only protection against fake "cures" and mistaken "cures." In the beginning of radium work and x-ray work, the results justified continued skepticism. However, improvements in materials and technique and increasing experience in the use of these powerful remedies, finally produced results that stood up under the most rigid analysis, and that placed irradiation alongside the knife as an effective remedy for cancer of the cervix.

SPECIAL EFFECTS OF IRRADIATION

When radium is applied within a cancerous mass, for example, in the center of a carcinoma of the cervix and left there for a considerable time, there are two zones of effect, as follows:

Zone of Complete Destruction of All Tissue. Within a certain distance of the radium, all tissue is devitalized and later comes away as a slough. The width of this zone varies with the

dose of the radium and the method of screening. As you know, radium gives off a variety of rays. Some are very destructive to the tissue close to the radium but do not penetrate far. For want of a better term these are often referred to as the burning rays or superficial destructive rays. Other rays penetrate deeply and exercise the differential effect in the outlying zone.

Zone of Differential Destruction. In this zone the cancer cells are killed but the tissue cells are not killed. It is this differential effect that carries the influence of radium beyond where we can go with the knife. It enables us to destroy cancer cells in the rectal wall, the bladder wall, the ureters and about the large vessels and nerves—that is, in tissues that could not be removed. You can see at once what a great advantage this is, for in most cases of cancer of the cervix some of these outlying irremovable tissues are already involved when the patient first comes under observation.

How is it that radium can exercise this differential effect? How do the radium rays kill cancer cells without killing the tissue cells? This important differential effect is due to the fact that new cells are more susceptible to destructive influence than old cells. This is a general law which obtains in all tissues and with practically all destructive influences: that new cells are more quickly damaged by destructive influences than old cells. The cancer cells are new and the tissue cells are old. Hence the cancer cells succumb to the radium rays while the tissue cells still retain enough vitality to survive.

This differential effect is not peculiar to radium, though radium gives it most markedly. Heat has this effect to some degree. An incision in a cancerous growth with a cautery kills cancer cells beyond the line of incision, a short distance farther than it destroys the mature tissue cells. That is the reason a cautery incision through a cancerous area is much more likely to heal than a knife incision. The surviving tissue cells in the narrow differential zone of cancer-cell destruction take on rapid growth and form healthy granulation, causing healing. This is a fact that has been long known, and it is the reason for the employment of the cautery instead of the knife in incisions through cancerous areas. However, with the

cautery this zone of differential destructive effect is very narrow. It may be widened by using low heat and slowly baking the tissues, but even then the zone is very narrow. With radium, on the other hand, this zone of differential effect may be made very wide enabling us to accomplish much more than can be accomplished with the knife or with the cautery.

Increasing the Zone of Differential Effect. How may this zone of differential effect be influenced, and especially how may it be widened sufficiently to become a factor in the treatment of carcinoma extending throughout the pelvis? Radium in its slow decomposition gives off a complicated variety of rays. For the purpose now under consideration it will suffice to refer to the three principal kinds: The alpha rays, the beta rays and the gamma rays. The alpha rays have hardly any penetrating power, hence are referred to as soft rays. They are usually all stopped by the glass of the small glass capsule in which the radium salt is sealed, so they are of little practical importance. The beta rays are somewhat more penetrating and must be reckoned with in their effect on tissues adjacent to the radium. Their power of penetrating, however is so poor that they are largely concentrated and expended in the tissues within a short distance of the radium. That is, they also are soft rays that because of lack of penetration cannot be used to destroy cancer cells over a large area. Their effect is to cause sloughing for some distance about the radium. If a large dose of radium is used this sloughing may be extended into the adjacent rectum or bladder or ureters. The third variety of rays, the gamma rays, are the hard or deeply penetrating rays. It is upon the penetrating gamma rays that we depend for the destruction of cancer cells deep in the tissues.

Now the problem in the radium treatment of an extensive carcinoma of the cervix is to give a sufficient dose of the penetrating gamma rays to destroy the distant cancer cells throughout the pelvis, without causing beta-ray sloughing into the rectum or bladder or ureters.

In endeavoring to secure this effect, four things must be carefully considered—the metal screening of the radium, the situation in which the radium is to be placed, the packing away of adjacent organs, and the size of the radium dose advisable in that case. The metal and

rubber screening materials used immediately about the radium are usually much the same in each case. It is advisable to work with fairly uniform screening so as to reduce the number of variable factors in each case-problem. The other three factors vary greatly in different cases, and each case must be studied individually and the means carefully adapted to the conditions present in that case if the patient is to be given the best chance for the preservation of life.

Metal and Rubber Screening. The sloughing rays may be diminished by materials that have very little influence on the penetrating gamma rays. Silver and brass and rubber are such substances. Ordinarily the small sealed glass capsule in which the radium salt is contained, is placed in a silver capsule, and then the silver capsule is placed in a brass capsule. This makes the usual radium tube, which at the time of use is further screened by being placed in rubber tubing.

Distance Screening. In addition to these special screening materials there are other important items in the screening process. One of these items is distance. The effect of the rays diminishes rapidly with the distance from the radium. Consequently, to prevent sloughing of the rectal and bladder walls it is important to push these structures away from the radium as far as possible. This is accomplished by gauze packing. The posterior vaginal vault and the anterior vaginal vault are distended by a firm packing, which pushes away the rectum and the bladder. This is called "distance screening" because the important screening effect is not from the gauze used but from the distance secured. Care is taken to make the packing very firm and to adjust it accurately, according to the conditions present in each case. With such a firm packing of course the patient cannot urinate, hence the introduction of a retained catheter is necessary.

Tissue Screening. Still another item in screening-out the destructive soft rays is the mass of tissue immediately about the radium. Where the radium can be placed in the center of a large mass of tissue, this assists in checking the sloughing rays. If this tissue were scooped out first and then the radium placed in the cavity, not such a large dose of radium could be safely given. In fact one of the trouble-

some conditions to handle is where there has been a hollowing out, by sloughing or cautery treatment or excision, causing a thin-walled cavity. Here radium must be used with great caution or a hole will be burned through the thin wall intervening between radium and the rectum or bladder.

Occasionally a portion of a mass interferes with placing the radium advantageously, in which case the interfering portion is trimmed away. However, this trimming away of tissue should be limited to what is necessary to permit the most advantageous placing of the radium.

Dose of Radium. The dose of radium that can be safely given must be determined by a careful study of the superficial and deep conditions present in each case and the adaptation of the various screening methods to those conditions.

PROGRESS IN IRRADIATION DEVITALIZATION

Effective irradiation treatment began a decade and a half ago. Much experimentation in radium and x-ray work was carried on before that, but it was about that time that irradiation reached the effectiveness that established it as a real cure for cancer of the cervix.

Radiation cured many cases that were beyond the reach of even the most radical operation. Its striking effect in such cases caused it to be used earlier and earlier in the disease, with increasingly good results, until now it has supplanted operation as the most effective treatment for this form of cancer. Long and careful study of and participation in both operative treatment and irradiation treatment have convinced me that, with the improved methods now available, intensive irradiation gives the patient decidedly the best chance of cure. There may be special conditions requiring some operation but when required such operation should supplement irradiation and not displace it.

The change in treatment brought about by the work of ten short years is very striking, even startling. The physicians now coming on the stage of action can hardly appreciate the cancer treatment situation only a decade ago, and physicians who have not kept up with these revolutionary cancer developments are in no position to advise a patient with cancer of the

cervix. Even in the last two years there has been such development in the effective use of radium and x-ray irradiation for the devitalization of deep cancer cells, that the uncertainty as to the best treatment for the earliest cases has been removed, and it is now clear that they also are most safely and certainly cured by irradiation devitalization.

The treatment of cancer carries a greater responsibility than the treatment of ordinary diseases. It has been said that a considerable proportion of human ailments are self-curative if given time, but cancer does not belong to that class. In cancer of the cervix, only the judgment and skill of the surgeon stand between that patient and certain death within a very limited time. The patient's survival is determined largely by the surgeon's judgment in the choice of remedy and his thoroughness in its application. Consequently, it is with a profound sense of personal responsibility that he selects the plan of treatment and proceeds with its execution.

ITEMS IN EFFECTIVE IRRADIATION DEVITALIZATION

Irradiation devitalization for cancer of the cervix comprises radium treatment for close-up concentrated radiation from the center of the cancer field, and x-ray treatment for wide-spread effect in devitalization of distant cancer cells. Each of these powerful remedies requires experienced judgment and skill in its use.

There is general recognition of the highly technical character of x-ray work especially of this deep therapy with its high voltage machines and other special apparatus. But, as to radium, there is a tendency among the inexperienced to regard it lightly, and to feel that it may be used with little personal knowledge of its physical properties or of its special effects on the various structures in the particular area involved. This tendency is encouraged by some of the radium-rental instructions given, which presume to fit the recipient for the safe and effective use of this potent instrument. It would be as reasonable to suppose that instructions issued with a scalpel would fit the recipient to use it safely and effectively in the eradication of a cancer. Radium is as potent as the knife and in inexperienced hands may produce as disastrous results—either in the form of in-

jury to adjacent organs or as failure to obtain results that might have been obtained by really effective use.

The obtaining of the curative effects of radium in cancer of the cervix depends on the careful carrying out of many details. Only by careful study and accurate execution of the various steps can the patient be given the best chance for cure. The essential details may be grouped under the following four headings.

a. Careful study of the special conditions present in each case. This is necessary in order to give the most effective radiation to the individual patient. The size of dose of deeply penetrating rays that can be given depends on a number of factors, including the location and size of the cancerous mass, the amount of involvement of each of the various organs in the immediate vicinity, the extent and direction of ulceration, and especially the fixation of the bladder and rectum in relation to the carcinomatous infiltration. The accurate determination of these conditions and the utilization of that knowledge in effective radium treatment requires a large amount of experience and skill in pelvic work. While in some situations the radiologist without special local knowledge may give effective radium treatments, in carcinoma of the cervix conditions are such that the most effective treatment can be given only by one skilled in pelvic work and with adequate radium training. His special knowledge of pelvic anatomy and pathology and his training in accurate pelvic palpation and diagnosis must all be utilized in the supreme effort to reach the marginal cancer cells with effective radiation.

The patient's chance for life lies in devitalization of the outlying cancer cells. It is in this particular that radium can go farther than the knife or the cautery, killing cancer in inaccessible situations beyond the reach of these other measures. One must not allow his attention to be diverted from this vital point by the striking effect of radium on the nearer portions of the cancer. The destruction of the large cancerous mass at the vaginal vault and the consequent healing, are only incidental to reaching cancer cells much farther out. This local destruction could be accomplished with the knife or with the cautery; there is nothing distinctive about it. The distinctive and superior effect of radium is the extension of differential killing ef-

fect to include cancer cells at the outermost margin of the growth. If we do not reach these outlying cells, our radium treatment has failed, except as a temporary palliative measure.

b. Maximum dosage. The danger of recurrence lies in the deep cancer cells. Our real problem, as just stated, is to reach and devitalize these deep-lying cells. The best chance of doing this is by giving as large a dose as practicable of the deeply penetrating rays at the beginning of treatment. This is accomplished by placing the heavily screened radium in the center of the cancerous infiltration and then packing away the rectum and bladder as far as possible, so as to allow the maximum dose. Never again will the conditions be as favorable for a devitalizing dose to the outlying cells as they are at the first application. If the opportunity is missed then, it will not return.

c. Supplementary deep x-ray therapy. An adequate dose of radium in the cancerous infiltration is the most effective form of radiation for devitalizing cancer cells within a reasonable distance. But in any case there may be scattered cancer cells beyond the reach of the radium. Deep x-ray therapy may devitalize these cells which otherwise would not be reached.

Formerly the x-ray was very uncertain in devitalizing effect on deeply placed cancer cells, but through great improvement in machines and tubes it has now become dependable for deep devitalization work. When radium was almost our sole reliance in cancer devitalization the radium treatment was given as soon as possible, and constituted the first step in the course. Since x-ray has now become dependable, it is advisable in most cases to give one series of that at the beginning, in order to secure some devitalization effect on the spreading margin of the growth before the disturbing local manipulation of radium implantation in the center. So our course starts with a deep roentgenization, to be followed at a selected time by the radium treatment. In the meantime donches and other local treatments are employed to diminish bacterial activity in the cancerous mass and put it in better condition for the operative manipulations of the radium implantation. By this plan the improvement secured in the condition of the operative field has been very marked, especially in the papillomatous and infected cases.

d. Careful follow-up of cases and treatment of any spots of recurrence. The importance of this and the good results often attained have been emphasized by a number of writers. The recurrences that are likely to yield to small radium applications are those in the vaginal wall, due to cancer cells that have wandered down beyond the reach of the radium applied in the cervix. If such a spot is recognized early, before any deep penetration, it may be cured by the dose of radium permissible in these conditions, especially by the employment of emanation in the form of gold or platinum "seeds." Of course, a large dose of radium, such as given at first, is not permissible after the bladder and rectum have been drawn in and fixed by the post-radium sloughing and scar formation, for it would quickly penetrate into one or both of these organs.

Where there is deep recurrence, x-ray therapy is the main reliance in checking it. Various efforts have been made to reach these deep recurrences with an effective dose of radium, principally through an abdominal incision. Some good results have been reported, but, on the whole the outlook in this direction is not encouraging. The difficulty is that a deep recurrence that can be recognized is usually a widespread recurrence, requiring such a large dose of radium that it can hardly be safely applied in the midst of large blood vessels and hollow organs. The best hope for these cases probably lies in the super x-ray, running up to 600,000 volts, which is now being developed.

REQUIREMENTS FOR RADIUM WORK

There should be no antagonism of the surgeon to radium. It is simply another helpful instrument added to his armamentarium. To be sure it is an instrument of unusual quality, in that its effects can be projected far beyond the site of its actual application. Also, it can modify function as well as structure, and hence has been aptly called the "physiological knife."

The requirements for the use of radium follow the same general principles as for the use of the knife or any other potent remedy—namely, adequate knowledge of the qualities of the remedy itself and adequate knowledge of the anatomy and physiology and pathology of the structures involved and of the effects of the remedy upon them.

There is the clear path for those who wish to use radium conscientiously and with safety and full benefit to their patients. And no one is better fitted to follow that path than the surgeon, grounded in the fundamental knowledge of the structures with which he deals and experienced in the skilful touch and sound judgment required in serious surgical work.

However, there is no easy short-cut to real efficiency in the use of radium, any more than there is to other important features of surgical work. It means real study of radium properties and effects, both physical and biological, and their use in conjunction with the anatomy and physiology and pathology of the affected area. If you were taking up the treatment of cancer of the cervix by means of the knife, you would give it hard study and also spend much time working with those experienced in the real radical operation for this disease. Similar preliminary study and experience are necessary for the safe and efficient use of radium for the same purpose.

PREVENTION OF CANCER OF THE CERVIX

There is another item in our duty as surgeons in diminishing deaths from cancer of the cervix, namely, the prevention of such cancer. It is not necessary to explain to you that chronic irritation in the cervix favors the development of cancer and that prompt removal of such irritative lesions prevents it, for you are all aware of these facts. What I do wish to emphasize at this time is the important relation of these facts to a very real crisis in the present cancer situation.

Through the splendid work of the last few decades the treatment of cancer of the cervix has advanced from absolute failure to the saving of about one-fifth of the patients. But there the rapid progress stops. The history of operative treatment and the history of irradiation treatment present the same phenomenon, namely, a rapid increase in the percentage of cures up to a certain point, and then the average remains about stationary. This average percentage of cures is better for irradiation than for operation, but even with all the improvements of today it seems impossible to push the average beyond 25%. Yet an analysis of the cures by classes shows that in early cases the cures run to 80 and 90 per cent. and oc-

asionally even to 100 per cent. And even in advanced cases, 20 per cent. may be saved by intensive irradiation.

Why does the average remain so low? If 95 per cent. of cases of beginning cancer can be cured and 20 per cent. of advanced cases, why does the average percentage of cures hover around 20 to 25 per cent? Why does not the percentage of cures average up to 60 and 70 per cent. as might reasonably be expected with all the strenuous efforts made to get the cases early? The reason is that very few cases of cancer of the cervix are seen in the early stage. This fact is clear from the aggregate statistics from all countries. It is strikingly illustrated in our own statistics at the Barnes Hospital of the Washington University Medical School. In the analysis of our five-year results in cancer of the cervix, from 1921 to 1926, 121 patients with this disease were treated. Of the 121 cases only 3 were in an early stage—all the others showing extensive infiltration of the parametrium, most of them out to the pelvic wall. As it happened, all three of the early cases recovered, giving 100 per cent. of cures in this class. But the great preponderance of advanced cases over early ones (118 to 3) brought the average of cures down to 22 per cent.

This means of course that practically all cases of cancer of the cervix are considerably advanced before recognition. But why is the cancer not recognized and treated early, especially after all the energy and educational efforts that have been expended in that direction for years past? The reason is that the really early stage of the disease causes no symptoms whatever.

The microscopic change that constitutes the beginning of cancer does not cause bleeding nor discharge. At first there is nothing to suggest cancer to the patient nor to the physician. By the time the so-called "early symptoms of cancer" appear, the cancer has already been present a considerable period and has developed extensive, though hidden, prolongations.

It is necessary then to attack this problem in some other way than by explaining cancer symptoms to physicians and patients. We must go back of the whole cancer picture, and remove

1. Conclusions from a Study of Five-year Cures in a Series of 121 cases of Carcinoma of the Cervix Uteri. *Am. Jour. of Obst. & Gynec.* Vol. 22, p. 559.

the conditions which precede the cancer and cause it.

It is well established that cancer of the cervix comes from long-continued irritation in the form of chronic cervicitis, usually accompanied with laceration, eversion, infiltration and cystic change. As I have said many times, these lesions are very obvious, and their role in cancer origin is generally known, and yet they are allowed to go on and on well into the cancer age. Great pains are taken in cases of chronic cervicitis to detect the first signs of cancer so that treatment for cancer may be promptly instituted, whereas a far safer plan is to remove the chronic cervicitis promptly before it becomes cancer.

Chronic cervicitis may be cured by simple excision of the affected area of the cervix, and thus cancer prevented. But when cancer has once begun in the irritated area, cure is uncertain even by the most radical measures.

It is clear that the removal of those chronic irritative lesions of the cervix which precede cancer is an important step in the prevention of deaths from such cancer. Not only is this an important step, but it is the only step by which to secure further marked reduction in deaths from this disease.

The detection and removal of precancerous cell-activity in the cervix is a many sided problem of great importance, and one which demands vigorous and systematized action. I took up this subject in considerable detail at the recent meeting of the American Gynecological Society and it is not necessary to review this large subject now except to emphasize that the hoped for results depend on definite action by the surgeon in three directions as follows:

a. The prompt removal of chronic irritative lesions of the cervix when encountered in practice.

b. Advice to patients as to the necessity of examination for the detection of such lesions, even when there are no disturbing local symptoms.

c. Assistance in the campaign of public instruction in cancer prevention, particularly as to the advisability of examination for the detection and removal of chronic irritation in the cervix.

Such examination is required even when

there are no local symptoms, for we know that even without troublesome subjective disturbance there may be sufficient chronic irritation in the cervix to favor aberrant cell-activity resulting in cancer.

This local examination may be part of the routine general examination, which many authorities are now advising as a safety measure to determine how the various vital organs are standing the wear and tear of life's activities.

SUMMARY

In brief then, speaking as a surgeon consulted by a patient with cancer of the cervix, my duty as I see it is as follows:

1. To give that patient the benefit of intensive effective irradiation for devitalization of the cancer cells throughout the pelvis, recognizing that the cure hinges on devitalization of the outlying cancer cells along the pelvic wall.

2. To give that patient the benefit of any operative procedure that may enhance the effectiveness of the irradiation-devitalization process.

In exceptional conditions some local operation may allow better implantation of the radium. However, this use of the knife or cautery is seldom needed and should be employed only where clearly indicated for a specific purpose, otherwise it is likely to do more harm than good. When required, operation should supplement irradiation and not displace it.

3. To protect that patient from half-way measures — from so-called radical operations that never reach the outlying cancer cells, and from ineffective radium and x-ray treatments that carry no devitalization into this distant crucial zone.

4. Another important item in my duty as a surgeon in lessening deaths from cancer of the cervix, is in preventing such cancer.

There are three parts in this work of prevention; first, prompt removal of chronic irritation in the cervix when encountered in practice; second, advice to patients as to the advisability of examination for the detection of such lesions and, third, active participation in the campaign of public instruction in cancer prevention, particularly that part of it which has to do with the detection and elimination of chronic irritation in the cervix.

THE DIAGNOSTIC IMPORTANCE OF THE ROENTGENOLOGIC EXAMINATION OF GROWING BONES*

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OAK PARK, ILL.

Many systemic diseases influence normal tissue functions in a more or less profound degree. These influences may be exerted by *toxins* of exogenous or endogenous origin acting directly on the cells, by *faulty or deficient nutrition*, or by *disturbances of metabolism* due to many factors or combinations of factors. Rapidly growing and immature tissues are more sensitive to these disturbing influences than are the mature and less actively functioning tissues. Throughout childhood and adolescence, but especially during infancy, the period of most active growth, we should expect certain manifestations of disease which do not occur at all, or only in a modified way after growth ceases. And this is actually the case.

The bones, because of their rapid growth and the peculiarities of their cellular and intercellular structure, present a particularly favorable field for a study of the effects of disease upon tissue growth. At the junction of the epiphyseal cartilage with the metaphysis where enchondral ossification occurs, there exists under normal conditions a finely balanced relationship of the processes concerned with the production of bone. This balanced relationship may be disturbed by insults to the general health of the growing organism due to many and varied causes.

Pathologists have long been able to demonstrate that certain diseases cause specific changes in the area of enchondral ossification. Roentgenology offers a means of visualizing these changes during life and has become a valuable aid in the diagnosis of many diseases of infancy, sometimes even before clinical or laboratory evidence exists.

In congenital syphilis osteochondritis and periostitis are frequently demonstrated in the absence of clinical or serologic evidence of the disease. Dr. L. J. Halperin and I, in a clinical, serologic, and roentgenologic study of 101 newborn infants of mothers with a 4 plus Wassermann reaction at the Cook County Hospital, found that 26% had suggestive clinical symp-

toms, 13.7% had positive Wassermann and Kahn tests, while 54.3% had either osteochondritis and periostitis or osteochondritis alone sufficiently marked to warrant diagnosis of congenital syphilis.

For all physicians who have to do with the care of children it is important to be able to properly interpret the roentgenologic evidence of such diseases as rickets, scurvy, and congenital syphilis. It is for the purpose of showing that the rapidly growing tissues at the area of enchondral ossification in the long bones of children are often a delicate index to disease, that this subject is being presented.

Enchondral ossification is said to take place in the following manner: In that part of the epiphysis lying closest to the metaphysis the resting cartilage is stimulated into activity, the cartilage cells proliferate and arrange themselves in columns. This is known as the *zone of proliferating cartilage*. Between the cell columns there are pillars composed of a cartilage ground substance which has an affinity for calcium, and as new capillaries grow up from the bone marrow and periosteum this cartilage ground substance becomes impregnated with calcium. This is known as the *zone of provisional calcification*, and it is this calcified area that makes the shadow on the roentgen film which we call the epiphyseal line. Under normal conditions the relative depth of the zone of cartilage proliferation and of the zone of provisional calcification remains constant. The cartilage cells between these pillars of calcified cartilage disappear as the result of the activity of the capillaries growing up from the bone marrow. The pillars projecting down acquire a layer of osteoid tissue supposed to be laid down by osteoblasts which have attached themselves to these projecting spicules. This new osteoid is rapidly calcified and true bone formation occurs. This zone is called the *primary spongiosa*. From a static standpoint this primary spongiosa is not efficient, so it is transformed, supposedly by the action of osteoblasts and osteoclasts, into a new spongiosa of true lamellar bone. This is called the *secondary spongiosa*.

In rickets the abnormal conditions which prevail may be summed up as follows: 1. The zone of cartilage proliferation is greatly increased in depth. 2. The zone of provisional

*Read before Section on Radiology, Illinois State Medical Society, Peoria, May 17, 1933.

calcification is very shallow; there may only be a very little in the vicinity of the periosteum at the border. 3. In the zone of primary spongiosa the trabeculae are covered with a large amount of uncalcified osteoid. Roentgenologically the appearance is as follows: 1. Coarse reticular structure of the bone in general. 2. Irregular epiphyseal line. 3. Frayed-out or mushroomed metaphysis with cupping or concavity.

In scurvy there is retardation of the activity of the osteoblasts so that very little osteoid is formed although that which is formed is normally calcified. Bone absorption however, whether due to osteoclasts or some other agency, goes on at a normal rate. The result is a certain degree of osteoporosis. The primary spongiosa is not formed because of the inactivity of the osteoblasts, the columns of calcified cartilage get no supporting osteoid tissue, connective tissue replaces the bone marrow as a so-called scaffold marrow. In reality, a marrow callus is formed as in fractures. Strewed through this scaffold marrow are fragments of broken calcified cartilage pillars of the zone of primary spongiosa. This is known as the zone of chaos, and recently has been called the scurvy line—essentially the same changes occur in the center of ossification in the epiphysis. The roentgenologic appearance in active scurvy is: 1. Wide epiphyseal line with a finely irregular appearance. 2. An area of decreased density on the shaft immediately proximal to the epiphyseal line (the scurvy line). 3. Thin corticalis of the shaft. 4. Smooth transparent aspect of the remainder of the shaft (ground glass appearance) on account of disappearance of the trabeculations. 5. A broad finely irregular white edge on the epiphyseal centers of ossification. 6. Separation of the epiphysis in severe cases.

In congenital syphilis there is retardation of normal bone growth probably due to the action of the toxins of syphilis on the osteoblasts. The results are much the same as those produced by scurvy. While the differences may usually be readily recognized in pathologic specimens the roentgenologic appearance of the two conditions is often practically indistinguishable. There is the same widened epiphyseal line with an area of rarefaction proximal to it. When periostitis is also present

the recognition is simplified. The typical uniform ground glass appearance of scurvy is not present as a rule. A knowledge of the history, the age of the child, and the clinical symptoms is frequently necessary in order to differentiate the two conditions.

When for any reason the normal growth of bone comes to a standstill, as is usually the case in severe infections or nutritional disturbances, a peculiarly dense ground substance is laid down in the zone of provisional calcification. This is known as a "Grenzschicht." When health is restored and bone growth is resumed this heavily calcified area remains and on roentgenologic examination shows as a band on the shaft proximal to the epiphyseal line. There are apparently some children who because of some constitutional peculiarity show this reaction more profoundly than others. Their bones may show a series of wide bands on the shaft at varying distances from each other, and even on the crest of the ilium they are often plainly seen.

DISCUSSION

Dr. John R. Vonachen (Peoria): I think Dr. Parmelee is to be congratulated in having the foresight to present a paper of this type for the simple reason that for years we have been overlooking the value of x-ray in early diagnosis of such conditions as rickets, scurvy and congenital syphilis.

Just last week I had a case come into the office of so-called Parrot's pseudoparalysis or acute syphilitic osteochondritis. The infant had apparently no other clinical signs of syphilis, a well developed baby, which often goes to prove that we are deceived. If we would utilize the x-ray we would be able to make early diagnosis. In these cases of so-called acute syphilitic osteitis, the supposition is that one-eighth of the cases will show bone changes at birth. At the end of three or four months a fourth will show bone changes; I speak of all cases of congenital syphilis.

This baby was perfectly well until about three months of age when suddenly it became very restless, cried a great deal, and both the parents and the physician were unable to tell what was causing the discomfort. Finally they noticed it did not use its arms and the family doctor made a diagnosis of Erb's paralysis. By x-ray we found this acute osteitis which again goes to prove that in these cases probably some day it will be a rule to do routine Wassermanns and take routine x-ray plates on a great many of those infants, particularly that type which are not doing well.

Dr. Parmelee (closing the discussion): I have nothing else to say except that the value of x-ray diagnosis of congenital syphilis is very strikingly shown in these charts, of cases we had at the County Hospital. Of course, we know that probably from twenty to thirty

per cent. or perhaps a little more of children of mothers with four plus Wassermann will not show evidence of syphilis from any standpoint during their first year. Possibly they are not syphilitic; maybe they will show evidence of syphilis later on, but of the children who do show evidence of syphilis in the first year, ninety-five per cent. of those had bone lesions, whereas a diagnosis from the serological standpoint could only be made in a very small number, twenty some per cent.

As early as 1900, Hochsinger showed the first x-ray pictures of osteochondritis in congenital syphilis. Later he made the statement that pathologic examination of infants who had congenital syphilis showed very definite changes in the long bones and it could be demonstrated roentgenologically in practically one hundred per cent. of the cases.

RECTAL OBSTRUCTION* (Lymphogranuloma Inguinalae)

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Generalization.—Rectal obstructions are considerably more common than one is led to believe; it is a well recognized fact that the most frequent causes for stricture are carcinoma and post-operative complications. The most frequent site is one to three and a half inches from anal opening, usually at point where the levator ani muscels encircle the intestine.

In general the causations of stricture of the rectum are widely distributed in their scope, yet considerable doubt is attached as to the etiology of many of these cases. One is readily convinced of the validity of this statement as he reads individual reports of proctologists in this country and other lands on this subject. In a detailed differentiation of rectal strictures one naturally becomes interested in the unknown in the hope of finding a solution. If you see considerable rectal material and do institutional teaching you will undoubtedly arrive at a case that in the past has been classified as chronic granuloma or syphilis of the rectum. These cases in the colored patients may have a positive serology test yet do not improve on anti-luetic treatment. A white patient with the same type of stricture very often does not present a positive Wassermann and these patients do not have any luetic signs or symptoms.

Literature.—This subject has been studied

early in France and other European countries. In the literature in the past two to three years the luetic basis for these strictures has been discredited and it is still being stated that the etiology of these obstructions is unknown. David and Lauer (1932) refer to a group of rectal obstructions in their report in which they express belief that the etiology of chronic granulomas or the so-called syphilitic strictures is still unknown.

Lutz (1932) is of the opinion these inflammatory strictures are caused by a late involvement of the rectum in lymphogranuloma inguinalae. This, he states, can be proved by the Frei test. Lutz further states that the fact that these strictures are usually located quite low and are most frequent in women can be explained by the anatomic structure of the lymphatic system of the genital and the ano-rectal region in women.

Antman and Pilot (1932) are of the opinion that lymphogranuloma inguinalae is an infectious process apparently venereal, characterized clinically by an inguinal adenitis, usually ending in suppuration.

Gregorio (1932) describes these cases to be a condition of hyperplastic infiltration of the rectum, a manifestation of subacute inguinal lymphogranulomatosis. He believes that it is difficult to deny a luetic origin because serology tests are mostly positive, yet it is difficult to determine if those with negative reactions were previously infected.

Fournier described these strictures as ano-rectal syphilomas, a manifestation of tertiary syphilis.

Nicholas Favre (1913) describes this disease as a tropical bubo.

Discussion.—Publications on the subject of lymphogranuloma inguinalae are becoming voluminous. In studying these cases carefully and going over the literature, it occurs to me that while many individual facts were reported peculiar to these cases no correlation was attempted on the basis of a common denominator, perhaps for a good reason. My particular interest in this matter was to correlate the rectal obstructions, so frequently present in these cases, with any constant factor that may serve as a common denominator for correlative purposes. The following are the factors known thus far:

*Read before Section on Surgery, Illinois State Medical Society, Peoria, May 16, 1933.

1. One constant factor claimed by all publications is a positive Frei test as specific for lymphogranuloma inguinalae regardless of the primary lesion.
 2. Presence or absence of involvement of inguinal glands has been considered a variable factor.
 3. The presence or absence of rectal obstruction and fistulae individually or in combination have not been observed in every Frei positive case.
 4. Likewise, the sex, age, race and serology tests have not proved to be a constant factor.
 5. Elephantiasis was not present commonly.
- These factors are classified in Table II.

With the exception of the Frei test in correlation with the general clinical picture of the disease there seems apparently no standard measure for comparison and inasmuch as the majority of these cases demonstrate discharge of pus in the initial stage or the late stage, it seems logical to name this an infectious process. A few authors reported staphylococci present in the pus from the affected glands. This, I have also observed in the pus from the rectal fistulae, therefore in the classification as to etiology (Table I) I am including this disease as a bacterial non-specific (mixed) infection. The presence of staphylococci may be assumed

TABLE 1—RECTAL OBSTRUCTION	
CLASSIFICATION AS TO ETIOLOGY	
A. Congenital	
B. Acquired	
1. Organic	{ Carcinoma Polypi Papilloma Sarcoma Epithelioma Linitis plastica
2. Bacterial	{ Tuberculosis of rectum Syphilis of rectum Gonorrhea Amebic dysentery
a. Specific	
b. Non-Specific (mixed)	{ Ulcerative colitis Pelvic infections Prostatic infections Hodgkins Lymphogranuloma inguinalae
3. Traumatic	{ Post-operative scars, fistula, etc. Leukoplakia Tumors outside of rectum

to be a secondary infection when obtained from a gland or fistulae that have become broken down—but not when a suppurating gland has been aspirated. Another standard of measure of comparison to my way of thinking should be a careful description of the type of stricture found in these cases, as in Chart I.

I classify these strictures as annular-tubular with apex of the stricture at about three to four cm. from the anal orifice, with the tubular formation of the stricture being distal to the annular constriction, and the apparently normal recto-pelvic colon proximal to the stricture. The finger meets with immediate obstruction

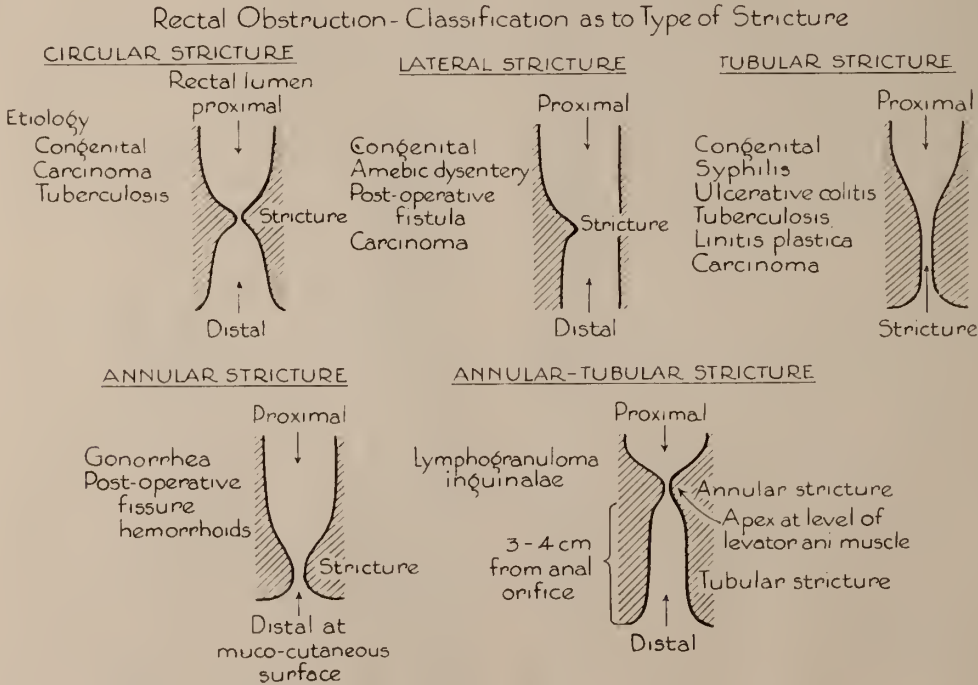


Chart 1.

on rectal examination and is of a leather-like consistency, almost stony hard to the feel and simulates syphilis of the rectum with the exception of rectal fistulae that are usually absent in syphilis of the rectum; it resembles tuberculosis of the rectum in many phases.

In the cases observed we cannot draw any correlative conclusions as to whether or not any relation exists between the presence or absence of rectal fistulae and the existent or discharging inguinal glands—in other words rectal fistulae may be present with rectal obstruction and not have any inguinal gland involvement; the reverse is also true. I have also observed the presence of inguinal adenopathy with rectal obstruction without presence of fistulae.

Frei test (1925) is usually significant, positive or negative, after the clinical course of the disease has disappeared. I believe that the reason why so few cures in these cases have

been noted or why so few will be noted is because the diagnostic test (Frei test) gives positive reaction after the disappearance of clinical manifestations; at a time when it is almost too late to obtain a cure, it is, therefore, that I suggest very strongly that as soon as pus is suspected in a resolving soft gland a Frei antigen should be prepared and injected subcutaneously.

It is my sincere belief that at the present time inasmuch as so little is known of the etiology and treatment of this disease, it is perhaps best to apply hot applications to the enlarged glands in the acute state (initial stage) and in this way produce a premature resolution of the gland and aspirate before the gland breaks down and persists discharging (for Frei antigen) in anticipation of the abortive stage of the terminal stage of scar formation. At the present status it is wrong to claim specificity in treatment of these patients (with Frei anti-

TABLE 2—RECTAL OBSTRUCTION
CLINICAL CORRELATION OF CASES OF LYMPHOGRANULOMA INGUINALAE

Sex	Race		G. C.	Wass.	Rectal Surg.	Proct. Diag.	Fistulae	Frei Test	Ing. Glands		
	C	W							Oper.	Disch.	Present
Male	*1		1		1	1	1	1			1
		*1	1					1			1
	1		1	1				1	1		
	1		1					1	1	1	
	*1						1	1			1
	1		1					1		1	
		*1	1		1	1	1	1			
	1				1	1		1			
		*1	1					1		1	
		1						1	1		
	1		1					1			
	1					1		1	1		
Female	1				1	1	1	1			
	1		1			1		1			1
	1			1	1	1	1	1			
	1					1	1	1			
	1					1		1	1		
	1					1	1	1			
	1			1		1	1	1			

gen) when fibrosis has already occurred in the rectum—it is similar to “locking the barn after the horse has been stolen.” The patients do improve in general following Frei antigen much like any infectious process may improve under non-specific protein therapy injections and the discharge of pus either from the inguinal glands or the rectal fistulae may subside partially or entirely, but the premonitory infiltrations and fibrosis in the rectal structure has been permanently formed and at present no evidence is available to show the rationale of antigen injections at the terminal stage; the infiltration and the fibrosis in the rectum remains as though no therapy had been administered.

I have had the opportunity through the courtesy of the Dermatology Department of the University of Illinois in cooperation with Dr. Senear, Dr. Wien and Dr. Perlstein, of that Department, to study a comparatively large group of these cases, who are still under careful observation, and I hope in some future date to be in position to report our findings of the correlated rectal pathology following antigen therapy over a longer period. I have attempted in two cases the use of tuberculin hypodermically. On two occasions a very marked reaction has been noted; in one patient a temperature rose to 101.8 to 103 degrees, a chill and a pain in the inguinal region. In this patient rectal fistulae and rectal obstruction were present, with no inguinal adenopathy. The second patient did not react.

In Table II I attempted to classify clinically all cases observed with a view of correlating if possible the presence or absence of any of the outstanding findings individually or in combination. I was particularly cautious in obtaining this information, but could not definitely clarify this situation on the basis of any conclusive findings. I am, therefore content for the present at least, to assume a conservative attitude and to adhere to facts as they arise in future studies of these interesting rectal obstructions.

CONCLUSION

1. I believe lymphogranuloma inguinalae to be an infectious process.

2. Rectal obstruction is a frequent finding in the terminal stage of this disease.

3. The obstruction is annular-tubular in form.

4. The fistulae when present are usually multiple.

5. I suggest early resolution and aspiration of any evident primary or initial lymphadenitis.

6. Frei test has been positive in cases in which no rectal obstruction was present of any type.

7. Frei test has been positive in cases in which rectal obstruction of the annular-tubular type was present.

8. Frei test has been positive in cases in which rectal obstructions were present but not of the annular-tubular type.

9. More careful study is essential covering a larger group of cases to be of correlative value.

307 No. Michigan Blvd.

DISCUSSION

W. A. Hinckle (Peoria): Someone has said, “Blessed is that person, who, having nothing to say, refrains from giving wordy evidence of the fact.” I am not going to demonstrate my lack of knowledge about this subject by trying to talk on it. When I was requested to discuss Dr. Streicher’s paper, I thought I was to discuss rectal stricture in general, not the one particular kind about which I know the least.

In my observation covering several thousands of cases, I have found about 1 per cent of stricture. This is about half what is claimed by some proctologists. In my experience, the majority of rectal strictures are due to malignancies. Next to malignancies, the most common rectal stricture is the postoperative. Strictures due to inflammatory proctitis of various kinds, tuberculosis, ulcerative, amebic, etc., are next in frequency.

There is one type of rectal obstruction that does not seem to be very well known or understood. Miles, Gabriel and other English proctologists have called attention to an anal constriction, not a complete obstruction, that is quite common. This constriction is due to a fibrosis of the pecten, doubtless caused by infection of the crypts in this area. Most of these cases will admit the finger, though possibly with some discomfort. A more careful examination of the anal canal will show a constriction, not of the whole anal lining, but of only a very narrow band near its center. It feels much like a string tied around the anal canal. This is what Miles and others call fibrosis of the pecten, or pectenosis. This condition is probably one of the chief causes of fissure. The area, having lost its elasticity, tends to tear instead of stretch. It is also the probable cause of more reflex disturbances than any other one rectal condition with which I am ac-

quainted. It is, seemingly, a minor affair, hence is often overlooked.

While lymphogranuloma inguinalae is interesting, important and rare, pectenosis is interesting, important and very common.

Minnie Perlstein (Chicago): From January, 1932, until May, 1933, we have seen thirty-five patients with lymphogranuloma inguinalae. These patients have been seen at the Cook County Hospital and the University of Illinois. Of those, about twenty are women and fifteen are men. Of the twenty women, three are white and the rest are colored. Of the men, it is about 50-50, half white and half colored. The cases have all been Frei positive and in three instances we have had post-mortem examinations to substantiate the diagnosis of lymphogranuloma inguinalae. I shall try to limit this discussion to those cases which I think are of interest to you gentlemen as surgeons.

In men the primary lesion on the penis is usually of very short duration and is usually not noticed by the patient. We have had two cases of inguinal adenitis where the primary lesion was still present. The superficial lymphatics draining the external genitalia are involved about three weeks later and a sub-acute suppurative adenitis results. This is usually unilateral but may be bilateral. The affected glands may involute spontaneously, but as a rule they suppurate and drain. The process of suppuration and healing goes on simultaneously and the typical picture of parallel fibrous bands with sinuses in the intervening sulci results.

In women the clinical picture is different. If the primary lesion is in the vulva, the drainage to the inguinal lymphatic glands and a marked elephantiasis of the vulva results, called "Esthiomene or Ulcus Vulvae Chronicum Elephantasticum." The inguinal glands may or may not ulcerate. However, in women the primary lesion is usually intravaginal. The lymphatic drainage is therefore to the deep lymphatic glands, the perirectal and perianal lymph glands. These glands suppurate and by compression cause a rectal stenosis and pelvimetritis. As the process of fibrosis goes on, a rectal stricture develops due to the external compression of the rectum and the direct involvement of the rectal lymphatics. This rectal stricture is usually found about 3 cm. from the anal orifice. The rectal mucosa from the site of stricture to the anal orifice is granular due to the involvement of the submucous rectal lymphatics. This sequence has been described by Jerslid as the genitorectal syndrome of lymphogranuloma inguinalae. Clinically the patient presents all the signs of rectal stricture. There may be a secondary involvement of the perianal lymphatics and the lymphatics of the skin of the surrounding area with the formation of draining sinuses of the buttocks, fistula in ano, and rectovaginal fistulae. If the process of ulceration is extensive, an ulcerative colitis develops with all the concomitant symptoms. We have had one woman with just this picture come to autopsy. Only last week a patient with a rectal stricture was operated on at the County Hospital after a diagnosis of lymphogranuloma inguinalae was made.

The patient came in complaining of pain in the abdomen and diagnosis was made of pelvic abscess. The surgeon discounted lymphogranuloma inguinalae as the etiologic factor and on operation found multiple abscess in the lower abdominal cavity connecting with the perirectal glands. The diagnosis of lymphogranuloma inguinalae was substantiated at autopsy twenty-four hours later.

We make a plea to the surgeon that in the presence of lymphogranuloma inguinalae he does not operate until the patient's clinical condition has improved, otherwise these patients will not survive surgical interference.

The Frei test is not an autogenous test. We do not use pus from the glands to inject or test the same patient. Frei material should give positive Frei tests in any patient with lymphogranuloma inguinalae.

From the standpoint of treatment, we have been doing a great deal of work with Frei antigen. This is given intradermally with excellent therapeutic results.

Dr. M. H. Streicher, Chicago (closing): In answering Dr. Hinckle I wish to say that I do not have any colored patients in my private practice. I do not, however, resent having them. If one does institutional teaching as we do at the University of Illinois it is natural that we see colored patients at the clinic. Dr. Hinckle is apparently not acquainted with the fact that lymphogranuloma inguinalae occurs in the white also. If you have seen rectal work, you have seen a case with multiple fistulae that do not heal; these cases very often have a positive Frei test and terminate in suppuration and subsequent rectal obstruction. About two years ago I operated on a white patient with one rectal fistula, one I thought was non-specific in origin. I have learned differently since, for that patient now has several discharging fistulae with a rectal obstruction. At that time I did not know of the Frei test and was not fully aware of the associated rectal syndrome of lymphogranuloma inguinalae.

We have asked Dr. Ewert in Dr. Charles McKenna's department if they see these cases, inasmuch as they have seen cases of buboes; apparently the urologist does not see them. The dermatologists are well acquainted with this entity in Chicago and elsewhere as well as the proctologists.

Rastus: "Ah done hear yo' stayed in de haunted house last night. What happened?"

Sambo: "About two o'clock Ah woke up an' a ghost came frew de side wall es' if de wall wasn't dere."

Rastus: "An' what did yo' do?"

Sambo: "Boy, Ah went frew de other side wall de same way."

"Poetry should be written on one side of the paper only, shouldn't it?" asked a young versifier.

"That depends on the poetry," replied the editor, wearily. "Lots of it shouldn't be written on either side."

THE PROPER EDUCATION AND REGISTRATION OF X-RAY TECHNICIANS*

GENTZ PERRY, M.D.,

EVANSTON, ILL.

Following the discovery of the x-ray by Wm. Conrad Roentgen in November, 1895, all classes of scientific workers became interested in the study of the x-ray and many inventive minds proceeded to make practical applications of the newly discovered ray. Each worker followed his own plan of procedure because there were no individuals trained or experienced in any way in either technical or medical lines.

It was but natural that many physicians earnestly tried to use the x-ray as an aid in their professional work. The large majority of these efforts were made to use the x-ray as an aid to diagnosis. Many laymen, especially photographers and chemists, soon became quite proficient in producing x-ray negatives. These individuals became, in some cases, an aid to the physician. In other cases they became competitors of the physician.

The physician, because of his intimate knowledge of the structure and functions of the human body and of the results of the diseases and injuries to which the human body is exposed, was much more capable of using the x-ray for diagnostic work than was the layman. On the other hand, the layman could devote more time to the technical study of the x-ray apparatus and the physical and chemical problems of making x-ray negatives than could the busy physician who was engaged in the practice of medicine.

For these reasons laymen often produced better x-ray negatives than the physicians themselves could make and thus became, in a manner at least, competitors of the physicians instead of honest assistants to and helpers of the medical profession. In this manner, many of the early lay workers in the x-ray field actually tried to enter the practice of medicine by means of their technical skill in making x-ray views of different parts of the body and then trying to interpret the films as a diagnostic procedure. The layman's lack of knowledge of the structure, functions, and pathology of the human body makes his attempts to interpret x-ray films a dangerous procedure, and yet this pernicious evil is still being carried on in some places.

While we are gradually eliminating this evil, there are still a number of x-ray laboratories conducted by laymen in various parts of the country. These commercial x-ray laboratories are most numerous in the larger cities; they flourish under a variety of names and combinations, and it is with much regret that I am obliged to say, that these commercial laboratories are, in some cases, patronized by otherwise sensible and upright physicians.

The medical profession can and should eliminate the evils of commercial x-ray laboratories and of laymen practicing medicine under the guise of "X-ray Laboratories," "X-ray Specialists," etc.

It is, of course, much more easy to *suggest* the correction of existing evils than it is to *actually make* such corrections. However, when I have finished this presentation of facts, which will be placed before you in the next few minutes, I shall have placed before you a practical plan of eliminating the evils that have just been mentioned.

While this correction of these evils and their menace to the public health and welfare will require the patient and united cooperation of the medical profession as a whole, yet it will be of so much value to the medical profession directly, and of such great value to the public, that the results to be gained are not only self-evident, but of such importance as to merit the united and persistent support of the entire medical profession.

Let us recall briefly a few historical facts:

1. The old time physicians had various and sundry helpers, many of whom were ignorant, dishonest, and undesirable individuals. These conditions were so bad and so much in evidence that a person acting as a nurse in those days was looked down upon as a person to be more or less shunned by respectable society.

To Florence Nightingale, whose 113th birth anniversary we celebrated on the 12th of this present month, should be given the credit for developing the science of the training, registration and supervision of the modern nurse.

The terrible Crimean War in Europe, followed by the equally terrible Civil War in our own country, were the impelling events that led this remarkable woman to devote her life to the development of the training and organizing of the profession of nursing.

* Read before Section on Radiology, Ill. Med. State Society, Peoria, May 17, 1933.

The World War has been the big factor in starting an equally important movement to properly train, register, and supervise the very modern profession of radiography.

During the World War the U.S. Army Medical School very successfully undertook the work of training x-ray technicians. Many of us medical officers specializing in radiology in the U.S. Army, especially those of us in the heavy and severe service in the A.E.F., were so greatly and successfully aided by these trained x-ray technicians that we became convinced of the practical value of such trained assistants, especially when these assistants were also honest and loyal in the discharge of their duties, as were the ones trained in the Army Medical School.

Shortly after the World War we developed a plan for the double purpose of properly organizing and supervising these x-ray technicians, and of assisting said technicians to secure suitable employment in civil life in first-class x-ray departments, laboratories, and offices.

Under the guidance of the medical profession, "The American Registry of Radiological Technicians" was thus established.

Time will not permit me to describe in detail the historical development of this Registry Board nor the full technic of its work. It has been organized by the combined efforts of the three large National Radiological groups of physicians in this country and the Section of Radiology of the A.M.A. It is thus founded upon a strictly medical basis, and its organization and activities are of the most broad-minded and professional scope that it is possible to attain. The present personnel of The American Registry of Radiological Technicians is as follows: President of the Board, Dr. H. B. Podlasky, Milwaukee, Wis.; Vice-President of The Board, Dr. Robert Arens, Chicago; Secretary, Dr. Ernst A. Pohle, Madison, Wisconsin; Examiner, Dr. Geo. M. Landau, Chicago; Executive Secretary of The Board, J. R. Bruce, Saint Paul, Minn.

Every x-ray technician registered by this American Registry of Radiological Technicians is carefully examined, and his or her record and standing fully investigated before the Board accepts said applicant for registry. Furthermore, all such registered x-ray technicians are kept under careful supervision. They take a pledge to do no film interpretation nor to do

any x-ray work of any kind except under the direction of an ethical physician in good standing.

All of these x-ray technicians, or Radiographers, are kept under constant supervision, and in case they do not live up to the standards above mentioned, their registry is cancelled.

It is thus very plainly evident that any physician employing an x-ray technician can make certain of getting a competent and reliable technician by employing one who is registered as above explained. Both male and female technicians may be thus obtained, and at no greater cost than the physician often pays for incompetent help. You can ascertain the exact present standing of any registered x-ray technician by writing to J. R. Bruce, Executive Secretary of The Board, 2642 University Avenue, Saint Paul, Minn., provided you enclose stamp for a reply.

I now come to another very important part of this discussion:—What the nursing profession owes to Florence Nightingale, the radiographers profession owes to Mrs. Emma Cutts Grierson. Born in Wisconsin where she received her elementary and college education, Emma Cutts came to Chicago and took a regular course of nurse education and training at Cook County Hospital. She then located in Saint Paul, Minn., where she worked as a professional registered nurse for many years.

After her marriage she also became interested in technical x-ray work and organized the Northwestern Society of Radiographers. She later helped to organize the American Society of Radiographers and was its President for several years. Through her efforts only the very best of the x-ray technicians were enrolled in this American Society of Radiographers, and she upheld a high standard of professional and moral ethics. She also established a very creditable scientific little Journal, called *The X-Ray Technician*, as the official journal of the Society. She was the editor of this journal at the time of her death.

As before stated, The American Society of Radiographers is composed of the older and better class of x-ray technicians of America. Its membership embraces Canada as well as Mexico and the Central American countries. This Society which now has 468 members in good standing, is very earnestly supporting

The American Registry of Radiological Technicians. That Board, in return, recognizes the value of the highly ethical organization of the American Society of Radiographers. Any properly trained and efficient x-ray technician of good moral standing, who is not connected with a commercial x-ray laboratory, or other unethical x-ray work, may become a member of The American Society of Radiographers.

At the annual meeting of that Society, held in Saint Paul, Minn., in May, 1931, The American Society of Radiographers created The Council on Education and Registration to plan a comprehensive course of study and training for the development of future x-ray technicians. In order to show you how broadminded, practical and loyal to the medical profession this Society of Technicians is, I want to inform you that they invited three Radiologists, Dr. B. C. Cushway of Chicago, Dr. Roy Kegerreis of Oak Park, Ill., and myself to become members of this Council on Education and Registration, and thus placed the matter of their future development and registration very largely in the hands of the medical profession.

We have had several official meetings of this Council on Education and Registration and have, we believe, worked out a practical course of study and training for x-ray technicians. This course of study and education was presented to The American Society of Radiographers at their seventh annual meeting held in St. Louis, Mo., in May, 1932, and was formally approved of by the Society in executive session.

The full text of this course of study and training was published in the July, 1932 number of *The X-Ray Technician*. I shall hand in the full text of this outline of study and training with this paper, but, unless so requested, I shall not take up your time to read it now.

COURSE OF STUDY AND TRAINING FOR X-RAY TECHNICIANS

QUALIFICATIONS OF APPLICANTS

A. All candidates admitted to this course must be at least twenty-one years of age and have as good health and personality as is required of candidates for admission in the first class Nurses Training Schools throughout the country.

All candidates for this course in radiography must present a written application for this course so that the application and qualifications of said candidate be made a matter of record. These applications must show that the candidate possesses a diploma of graduation from

an accredited High School and that such candidate has successfully finished the subjects of physics, algebra, geometry, physiology and chemistry as they are ordinarily covered in the average High School course.

In addition to this basic requirement, said candidate must be either: (1) A graduate nurse; (2) a person who has successfully finished at least two years of the regular course of training in an accredited Nurses Training School; or (3) a person who has successfully finished the first two years of a college course in science, preference to be given to candidates for this course in radiography in the order named.

B. This course in radiography is to be given only in hospitals of at least one hundred bed capacity and maintaining an accredited Nurses Training School, or in large medical Clinics approved of by both the Council on Education and Registration and by The American Registry of Radiological Technicians.

C. The time of this course is to be one full calendar year. The work to be divided between the various subjects of training approximately as designated in the time allotment shown after each subject named in the course, it being understood that certain subjects may be studied concurrently with other activities of this course as may best fit in with the activities of the school or X-ray department where the course of instruction is being given. It is, however, distinctly understood that all students taking this course in radiography are to devote their entire time and energies to this course and are not to be expected nor permitted to do any other work during the entire year that they are taking this course.

D. The course of instruction is to cover the following subjects in approximately the order and time designated below:

CONTENT OF COURSE

Theory—3 months
Practical work—9 months

SUBJECTS TAUGHT

1. General elementary anatomy and physiology, regional and surface anatomy—12 weeks.
2. Physiology—12 weeks.
3. Nomenclature and terminology—full year.
4. Fundamentals of physics and electricity, including light and X-rays—12 weeks.
5. Roentgen apparatus and mechanics—40 weeks.
6. X-ray tubes and production of X-rays—4 weeks.
7. Dark room chemistry and technic—12 weeks.
8. Basic technic factors and development of technic for all standardized procedures in radiography, and demonstration and practice of exposure technic for various parts of the body; rapid, slow, soft tissue work, etc., including effect of the factors of technic—kilovolts, milliamperes, distance, time—40 weeks.
9. Bedside unit—construction, operation and technic—4 weeks.
10. Electrical and radiation dangers and protection; trouble shooting—40 weeks.
11. Positioning—40 weeks.
12. Filing records; record keeping, history taking typing—12 weeks.

13. Ethics; department management—12 weeks.
14. Calibration of machine—4 weeks.
15. Preparation of patient—12 weeks.
16. Technic of fluoroscopy—4 weeks.
17. Management of casts and splints—12 weeks.

GENERAL PLAN OF COURSE

I

Rotating Service with new students admitted every three months or every six months, depending upon the size of, and amount of work done by, the institution giving the course of training.

II

Dark Room—Chemistry; care of screens and films; developing.

III

Office—Filing; typing and record keeping; waiting upon attending physicians; history taking and making of appointments, etc.

IV

Junior Technician Service—Keeping linen in order and assisting in keeping X-ray equipment clean and in order; preparing opaque enemas, under the supervision of Senior Technician, and assisting with fluoroscopic examinations; doing simple radiographic work on extremities.

V

Senior Technician Service—Preparing opaque material for gastro-intestinal examination; supervising and assisting junior Technician in all of the latter's activities; taking care of all important radiographic work, such as gall-bladder and gastro-intestinal cases, chest films, head films of all kinds, all stereoscopic film work and all soft tissue and other particular technic.

VI

Therapy Service—Senior technician assisting the radiologist in therapeutic use of X-rays and radium; also taking care of dental radiography and bedside unit.

I trust that I have made it plain to all of you that if you will employ only registered x-ray technicians, or only those physicians who employ registered x-ray technicians, you can, in a very few years, eradicate the dangerous nuisance of commercial and lay x-ray laboratories.

In closing permit me to state that all members and officials of the Board of The American Registry of Radiological Technicians and also all members of The Council on Education and Registration are serving without any pay or compensation of any kind except that of a satisfied conscience of having performed our duty in the service of and for humanity.

Furthermore, the above organizations function for the whole of North and Central America. We have thus far succeeded in keeping these things completely out of the hands of all local, state or national politicians. It is our earnest desire to keep these activities on a strictly pro-

fessional basis, and we are definitely and positively opposed to any and every form of state licensing or other political registration of x-ray technicians.

We feel that it is not only the duty of the entire medical profession to give these matters your undivided support, but we believe that we have shown you a practical way to eliminate the Commercial X-ray Laboratories and dishonest lay x-ray technicians.

DISCUSSION

Henry Grote (Bloomington): I think there was not enough truth told in the paper, in regard to the presentation of conditions as they are. Probably the great mistake at the beginning of roentgenology was the fact that large educational institutions did not take hold of it and put at least the fundamentals of radiology in their courses. The result was that not only the man that was scientifically inclined, but also the adventuresome or the curious, then the desperate, came into the field and they played with it. The result was they simply raised a crop of dragon's teeth which has existed for quite a long period. It is only recently that we have been able to get really trained technicians.

In the medical profession we have had several different kinds of doctors, we have had the ignorant, the dishonest man, then we have the very brilliant man who is also sometimes dishonest, those men who employ any one who are "yes" people; in other words, "yes" technicians. I do not know that there is going to be a millennium reached very soon in which we are to have absolutely intelligent, honest technicians. I do not believe that will happen as long as we have the ignorant in the profession, as long as we have the brilliant, dishonest man, because he is going to develop these dragon's teeth.

Personally, I hope that this plan will work out rapidly. I think it ought to be published. It is a very meritorious effort and it has absolutely honest men back of it.

There is one other consideration. The reason that we have the commercial laboratory and the reason that we have the dishonest technicians, and by that I mean the "yes" technicians, is the fact that the hospitals are largely in control of the manufacturers. They have over-sold the country on x-ray equipment, as well as hospitals. With the control of the majority of hospitals by the manufacturers, it would be very difficult to produce an honest, smart, intelligent technician. I think that might be incorporated in the report of the Council and those who are not afraid of manufacturers will certainly not be afraid to say something along that line. Personally, I am not in very good standing with any manufacturers because I do voice these sentiments. The one sentiment they don't like is the fact that they cannot sell brains with the equipment.

B. C. Cushway (Chicago): You know this is the day of the new deal. Why not give the radiological technician and radiology a new deal? There is one thing I

think we should make up our minds to do as physicians; to try to disassociate ourselves from the lay worker and from the layman in any association in medical work. We have had expressions from those who have spoken previously about the mistakes we made early in taking lay people in and training them to be our assistants in radiological work. We now have a plan on which the Council of Education has spent a good deal of time and thought. We feel it is a good thing. We certainly wish you would cooperate in this problem.

There are two separate problems. The first is the educational equivalent of the technician or the technician to be, whom we are to take into training. We know in all lines of endeavor, industrial and commercial work, the higher standard of education is absolutely necessary and it is getting higher and higher. Certainly we who are professional men and working with scientific apparatus can do no better than to fall in line with industry.

Aside from the problem of the preliminary educational training of the potential technician is the second problem, which is the training itself. The training must be of a sufficient length of time spent in the theoretical and practical side of the work to enable the technician to have a thorough understanding of the problem.

Strange as it may seem, there are radiologists in the country who do not feel very kindly toward having technicians trained by any one other than themselves, and this seems rather a narrow-minded outlook on the subject. This same condition existed in medical training years ago. As we all know, a man who wished to engage in the practice of medicine went in as understudy with a preceptor and was trained by one man. In the early days of nursing the same condition existed. We all feel there are many advantages in the present training for the practice of medicine, also the training of nurses for the practice of nursing.

I would like to add, in conclusion, that this plan has been worked out through the wishes of the technicians themselves who are very cooperative, and have a keen sense of appreciation of what this problem means. It has also been worked out through the Council of Education and with the cooperation of the registry board. I hope you will give this subject favorable consideration.

Dr. Perry (closing the discussion): I think Dr. Grote's bringing out the matter of the "yes" technician is a very fine thing. You know all the hospitals, at least ninety per cent, are trying to use their x-ray departments as a source of revenue. To that end they are not only using technicians but physicians. This very pledge which the technicians take, if they register with the American Board, prevents them from being "yes" technicians. They have to function ethically whether their employes want them to or else they are dropped from the registry. I have had a number of instances of that type come up.

In regard to the technicians coming under the manufacturers, I have only told you the pleasant features of this.

I have had so many absolute quarrels, personal discussions with some of the x-ray salesmen and manu-

facturers that some of them won't speak to me any more.

The x-ray manufacturers are to blame for a lot of this. There is high pressure salesmanship placing x-ray equipment into the hands of everybody who will buy. Taking the office girl and training her to be a technician in a few weeks is one of the most pernicious things we have had to encounter, and, believe me, we have fought it hard. I do not wish to tell you about a lot of destructive things we have gone through, but you are absolutely right in that respect. I heartily concur with everything that has been said in these discussions.

Dr. Arens brought out the matter of the Kentucky board. These State Boards are a pernicious evil. There is an x-ray technician in Chicago who is taking in everybody he can take in, gives them four weeks of training and a very beautiful diploma, signed not only by himself but by the superintendent of the hospital where he works.

I wish to thank you for the interest you have taken in this subject.

FINDS SOAP AND WATER VALUABLE GERM KILLERS

Common ordinary soapsuds, particularly hot ones, are extremely good agents for killing germs, Dr. John E. Walker of Opelika, Alabama, has recently reported to the American Medical Association. The germs of pneumonia, meningitis, diphtheria, syphilis, gonorrhea, influenza, and the streptococcus germ were all killed in about two minutes by comparatively weak solutions of soap in cool water, Dr. Walker found from his own and other investigations.

The soapsuds compared favorably with many newly synthesized chemicals in germ-killing power. The brand of soap apparently made no difference, brown laundry soap, floating white soap, perfumed toilet soap, cocoanut oil and olive oil soaps, and soap made according to the standards of the U. S. Pharmacopeia were equally effective.

"When properly used for cleaning the hands or for washing eating utensils, soaps are undoubtedly potent factors in preventing the spread of diseases due to these organisms," Dr. Walker concluded.

However, the germ of typhoid fever and the staphylococcus organism are not destroyed by soaps, he added.—*Science Service*.

The only time a pedestrian ever has the right of way is when he is en route to the hospital in an ambulance.—*Greensboro (Ga.) Herald-Journal*.

The idea is advanced from New York that hardware dealers sell drugs in competition with drug stores that sell hardware. This might be a sort of counter irritant.—*Weston (Ore.) Leader*.

Tex Guinan's appeal to "give the little girl a hand" might have helped the dear little creature a lot had the hand landed on the right spot.—*New Orleans States*.

Scientist says that this universe is made up of protons, photons, electrons, and neutrons. He forgot to mention the morons.—*Dunbar's Weekly*.

Singing increases the blood-pressure, declares a Southern doctor, but he doesn't say whose.—*Boston Herald*.

WHAT IS BLINDNESS?

A PLEA FOR THE MORE FREQUENT USE OF SIGHT
SAVING CLASSES IN THE PUBLIC SCHOOLS*

A. L. ADAMS, M.D.,

Ophthalmic Surgeon to the Illinois School for the Blind

JACKSONVILLE

When it is considered how long the standard of normal vision has been established, is it not strange that there should not be a more definite idea of what really constitutes blindness?

It has been described "As an incurable total loss of sight." The popular definition of it however is, "That condition in which the sight is so diminished that any occupation requiring the use of the eyes is impracticable."

The Workmen's Compensation Act, the various Blind Pension Acts, and the laws governing the education of the blind, call for an exact definition of blindness.

In deciding whether or not a given person is blind it is often necessary to fall back on legal interpretation, to find out the intent of the law.

Maine defines blindness as "less than 1/10 vision," 20/200 Snellen. In Missouri, blindness is defined as "Vision not greater than light perception." Nebraska defines a blind person as "One who is destitute of useful vision so as to be incapacitated for the performance of labor, rendering such person incapable of earning a support." Ohio, New Hampshire, Nevada, California and Idaho define a blind person as one who has a defect of vision incapacitating him to earn the necessities of life.

Educational blindness is present when the person cannot, because of loss of vision, receive an education in the public schools. Efforts have been made to establish a definite limit in visual efficiency. Some authorities would place this at 20/200 or 1/10 vision. Others would place it at 20/70th.

Mr. Lewis H. Carris (managing director of the National Society for Prevention of Blindness) says in one of his reports: "In general, it is considered expedient to call a person blind who has only 1/10 of visual acuity. But what about those of us who do not know what one-tenth of vision means, and how to measure sight? Then again, it is not sufficient to con-

sider only the degree of vision; the extent of the visual field is an element of highest importance, and there are other factors to consider as well. It is necessary in censuses that each doubtful case be considered by a specialist with his complicated equipment in order to control these various standards."

Mr. Carris quotes the following definition of blindness from "Handbook on the welfare of the Blind in England and Wales": "The Ministry of Health in circulars 681 and 780 explained the principles which they adopt in deciding whether a person is too blind to perform work for which eye sight is essential. Briefly, only visual factors can be taken into account and other bodily or mental infirmities should be disregarded."

Where the acuity of vision (refractive error being corrected) is below one-twentieth of normal (3/60 Snellen), the person may be usually regarded as blind. Where the acuity is better than 6/60 (Snellen), the presumption is that the person is not blind unless there are such counterbalancing visual conditions as great contraction of the field of vision marked by nystagmus, etc. "The test to be applied is not whether a person is unable to pursue his ordinary occupation, or any particular occupation, but whether he is too blind to perform work for which eye sight is essential."

Dr. Edward Jackson, in the *American Journal of Ophthalmology*, March, 1933, says: "Total blindness, loss of all light perception is entirely different from economic blindness—inability to perform any work for which sight is essential; or from educational blindness—too blind to read the ordinary school books used by children. It has been attempted to fix the limit of blindness at a certain fraction of full visual acuity at a distance at less than 6/60 or 1/10. But to ignore the field of vision and the light sense, admits grave confusion and injustice."

In discussing the certification of blindness, N. Bishop Harman, of London (*The Medical Officer*, Dec. 24, 1932), who has done much to prevent blindness and assist the blind, mentions three cases that illustrate the practical difficulties encountered. A woman with chronic glaucoma, V=6/9; but with field limited to 5° from the fixation point, can read when she can find the place; but cannot walk without being

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led and cannot shake hands with a visitor.

A country parson, with central senile choroiditis and central $V=0$, but a good peripheral field, has complete freedom of movement, and knows his prayer book; and so goes about and performs all his parish duties. A volunteer officer with retinitis pigmentosa, had full vision and good fields, by daylight, but had to be led when marching at night.

Organic blindness due to ocular lesions can be recognized or excluded with certainty. But psychic blindness, as illustrated by "Shell Shock" and hysteria may puzzle or defeat the most experienced diagnostician. Seeing is done, not with the eye, but with the brain. The great mass of cerebral convolution, that have developed with accurate macular vision, explains the enormous influence of vision upon all our consciousness; and suggests the possible influences of cerebral function upon vision.

Perhaps the broad practical definition for blindness is important deficiency of useful vision. In Schools for the Blind it is recognized that a large proportion of children have some sight. Harman says, "Where there is no full provision for children with defective sight, and no choice between elementary school and the Blind School, it is inevitable that border-line cases will be drafted into the Blind Schools. The certification of blindness in children can rarely be final. It should always be recognized as provisional and subject to revision. No sharp and permanent line can be drawn between blind and seeing, either by a formal definition, or a scientific test; and it is not desirable that there should be a discrimination."

The majority of those called blind can find satisfaction and usefulness in the exercise of the remnant of vision they do possess. The most that can be done for them is to help them keep and use what sight they have. When it becomes necessary to discriminate between the seeing and the blind, for purposes of education or care, each case should be carefully studied for itself by a person trained and experienced for such examination, both as to ocular conditions present, and as to other abilities and surroundings.

As examiner of the eyes of those making application for entrance to the Illinois School for the Blind, I have been deeply interested in this problem and feel that much can be accom-

plished by a consideration of these questions presented to you today.

The decision as to the advisability of having a child with defective vision continue with his handicap in the public schools or to send him to the School for the Blind is often not easily made. It should depend not only on the actual eye conditions present, but on the probable outcome. We know that the vision in some children will in all probability improve, while in others, even though the vision is fairly good, we know it will inevitably become worse. The field of vision and the light sense must be carefully considered.

There should always be an opportunity for a revision of opinion; should the vision improve and the eyes be in a condition of health the student should return to a sight saving class or to the public school.

As the children come from all parts of the State it is important that competent advice should be had as near their homes as possible before application is made to enter the School for the Blind. By this examination the amount of vision present, the necessity for treatment or operation would be determined.

I would recommend to the Board of Public Welfare the appointment of official examiners in all the larger cities of the State, who should be members of the Eye Section of Illinois State Medical Society who would make the preliminary examination of the eyes of those desiring to make application for admission to the School for the Blind. The final decision to be made by the Ophthalmologist in charge at the School, after sufficient time for examination and observation.

The ophthalmologist of the School for the Blind or of Sight Saving Classes should be given the findings of these examinations by the examiners of the blind before an application is made for their admission. A moderate fee should be paid to these examiners by the state, for this service.

From the larger cities most of the applicants have had competent advice from physicians and social service agencies, but often those coming from the country or small towns have the application made out by a neighbor, visiting nurse or an optometrist with the question as to the cause of blindness answered by "Fever," "Sore Eyes," "Had a Fall," or "Don't

Know" and the query as to the amount of vision is answered by "Poor," "Can See Large Print," "Can see to get about."

The physician near home has the opportunity of getting more or less history from the parent or guardian, which is of great importance in determining the cause of blindness. When we find both eyes shrunken to the size of small buttons or even enucleated, and no history attached, the "Undetermined" in the records become understandable.

The basic law providing for the Education of Blind or Deaf Children is as follows:

EDUCATION OF DEAF AND BLIND CHILDREN

An Act to make provision for the education of deaf and blind children. (Filed June 28, 1917. L. 1917, P. 734).

683. DUTY OF PARENTS OR GUARDIAN.

Section 1. Be it enacted by the People of the State of Illinois, represented in the General Assembly; It shall be the duty of every parent, guardian or other person, having the control or charge of any child in this state between the ages of eight and eighteen years, who is deaf or blind, or whose hearing or vision is so defective as to make it impracticable to have such child educated in the ordinary public Schools of this state, to send such child to some school under private or public supervision, where special provision is made for the education of the deaf or blind; if there be such a school within the county where such child resides, then such child may be sent thereto, but if not, then to some other convenient school of that character, within the state or to the Illinois School for the Deaf, or to the Illinois School for the Blind, at Jacksonville. Provided, that nothing herein shall require a child not physically or mentally competent to be educated, to be so sent.

(Smith-Hurd, 1929—Chapter 122, Article 682, Section 1, Page 2727.)

The opportunity for difference of opinion in the interpretation of this law can be easily seen. Given a child with even slightly defective vision, with an active mind and full of mischief, who fails to keep pace with his fellow students, a teacher overworked with from forty to fifty pupils, a visiting nurse and the stage is set for another applicant for the School for the Blind.

On the other hand, it is not at all unusual to have the field workers find a blind child whose parents had never heard of a School for the Blind.

During the past year among 250 pupils in the School for the Blind 109 either had no vision or light perception only. Seventy-three could only count fingers. Fifty-five had vision

with correcting glasses of 20/70 to 20/200. Thirteen had vision of 20/70 or better.

Of those having vision better than 20/70 three had high myopia. One had vision of 20/30, contracted fields and night blindness. One had vision of 20/45 with coloboma choroid and nystagmus. Several had congenital cataract; with correction had vision of about 20/45. One with vision of 20/60, had macular changes. Five had vision of just 20/70ths with the better eye.

While 55 of these 250 pupils have a vision between 20/70 and 20/200 and would seem to be eligible for sight saving classes, we find that a large majority of them are from small cities and country districts where no such classes are available.

The State requires these children to be sent to school between the ages of eight and eighteen and at present except in the larger cities, the School for the Blind is the only available place for them to attend school.

A method for the education of these children with partial sight was first developed in the United States by Mr. Edward E. Allen, a director of a School for the Blind in Massachusetts. This school opened in April, 1913.

The plan consists in using the vision available under the most favorable circumstances. The teacher of these sight saving classes should have special training for her work, after from two to five years experience in teaching children with normal vision. This special training is available at the summer courses at Columbia University, the Universities of Chicago and of Cincinnati and other universities. An intensive training for six weeks will enable a teacher to conduct a class.

Mr. Edward T. Myer in his survey of Sight Saving Classes in the Public Schools of the United States gives sixteen as the largest number possible to be included in a sight saving class. These classes have been maintained in cities of only 3,600 school enrollment. The per capita cost at the Illinois School for the Blind last year was \$862.41. The average cost per pupil enrolled in the public schools of Illinois for 1931-32 was \$95.52.

About 4.5 per cent of the pupils in sight saving classes in the United States are returned to the regular classes in the public school after from one to two years' time.

At the present time there are 44 sight saving classes in Illinois; thirty-three in Chicago, two in Joliet, two in Rockford, two in Rock Island, one in each of the following cities: Aurora, Elgin, Evanston, Springfield and Villa Park. There are usually twelve to fourteen children in each class. Villa Park, with a population of 6220, is the smallest city in Illinois in which a sight saving class is established and to it come children from all over Du Page County.

Where the vision of an applicant in the better eye is found to be 20/70 or better, and there is no active pathology endangering vision present, the applicant should always be referred to a sight saving class, providing one is in operation in the city from which he comes.

By the law passed in 1929 the State will provide \$250.00 per annum toward the maintenance of one pupil in a sight saving class. It is as follows:

An Act to enable School Directors, Boards of Education and Boards of School Inspectors to establish and maintain classes and schools for children, deaf, blind, and having defective vision, and providing for the payment from the State Treasury of the excess cost of maintaining and operating such classes and schools over the cost of maintaining and operating elementary schools for normal children and to repeal a certain Act therein named.

July 1, 1929.

Be it enacted by the People of the State of Illinois, represented in the General Assembly;

Section 1. Boards of education, school directors and boards of school inspectors, whether acting under the general law or under a special charter, shall be empowered to establish and maintain classes and schools for children, deaf, blind, and having defective vision, who are residents of their respective school districts.

Section 2. Such boards of education, school directors and boards of school inspectors may acquire sites for such schools anywhere within the counties in which their respective school districts are situated in the same manner as is provided in the case of the acquirement of public school sites in said respective school districts, and authority is hereby expressly granted for this purpose.

Section 3. The boards of education, school directors and boards of school inspectors establishing and maintaining such classes, school or schools, may employ a superintendent and all other necessary officers, agents and teachers for such schools and classes, and shall prescribe the method of discipline and the course of instruction therein, and shall exercise the same powers and perform the same duties as are prescribed by law for the establishment, maintenance and management of other classes and schools, and in addition thereto, shall have all powers necessary to carry the terms and provisions of this Act into operation and effect.

Section 4. If a child resident of one school district attends in another of said school districts a class for the blind, or deaf, or for those with defective vision, or a class in which some special instruction needed by the child because of his handicap is provided, by the board of education, directors or board of school inspectors of the school district in which he resides shall pay to the school district maintaining the school or class he attends his tuition in a sum equal to the tuition in the school district in which such class is located for a child of normal instruction needs. The board of education, directors or board of school inspectors of the school district in which such child resides shall pay for his transportation to the class in other school district, unless the school officials of the school district in which the class he attends is located provide his transportation to the class.

Section 5. No person shall be employed to teach any class or classes in such school or schools who shall not have first obtained a certificate of qualification for teaching in such school or schools, as provided by law. But no person shall be authorized or employed to teach the deaf who shall not have received instruction in the method of teaching the deaf for a term of not less than one year, and no one shall be employed to teach the blind or those having defective vision, who has not had the benefit of special training approved by the Superintendent of Public Instruction.

All classes or schools maintained for children, deaf, blind, or with defective vision, shall be established for the benefit of such children who are between the ages of three and twenty-one years.

Section 6. Each board of education, school director and board of school inspectors shall keep an accurate, detailed and separate account of all moneys paid out by it for the maintenance of such classes and schools and for the instruction and care of the pupils attending them, and shall report the same to the Department of Public Welfare for the approval, on vouchers, prescribed by said Department, on or before the third Monday in August in each year, together with the excess of cost for each and every pupil for each school year, ending in June, over the last ascertained average cost thereof, for the instruction of normal children in the elementary public schools of its school district for a like period of time of attendance, as such excess shall be determined and computed by said board of education, school directors or board of school inspectors.

Section 7. The aggregate excess cost of the maintenance of such classes and schools, as determined, computed and reported by the said school officials, as provided in Section 6 of this Act, shall be, and the same is hereby, made a charge against the State of Illinois, and such excess costs shall be paid annually to such board of education, school directors or board of school inspectors, as the case may be, on the warrant of the Auditor of Public Accounts out of any money in the treasury appropriated for such purposes on presentation of proper vouchers approved by the Department of Public Welfare; Provided, however, that such excess costs for each pupil shall not exceed the following amounts: For deaf pupils, \$110.00 a pupil; for blind pupils, and those having defective vision, \$250.00 a

pupil. If a child is both blind or has defective vision and deaf, he shall be counted as full time pupil among those with each kind of defect, in determining the state's contribution to the classes for such children, provided the work and attention necessary for both types of children are afforded him.

Section 8. All classes and schools established according to any of the provisions of this Act shall be subject to the general supervision of the Superintendent of Public Instruction.

Section 9. The Auditor of Public Accounts is hereby authorized and directed to draw his warrants on the State Treasurer on or before the first Monday in September of each year for the respective sum of excess cost theretofore reported to him, as provided in Section 7 of this Act, upon the order of the Department of Public Welfare.

Section 10. An Act to enable school directors and boards of education to establish and maintain classes in schools for deaf and dumb and blind and providing for the payment from the State Treasury of the excess cost of maintaining and operating elementary schools for normal children, approved June 2, 1911, in force July, 1911, as amended, is hereby repealed.

The examination made by the proposed examiners of the blind should include a report on each of the following subjects:

Name.....
 School.....
 Address.....
 Grade.....Age.....Sex.....
 History of Eye Condition:
 CONJUNCTIVA
 CORNEA
 PUPIL REACTION
 FUNDUS EXAMINATION
 VISION WITHOUT GLASSES.....
 REFRACTION UNDER A
 MYDRIATIC
 VISION WITH GLASSES.....
 IS THE CONDITION STATIONARY IN YOUR
 OPINION?
 WILL STUDY BE HARMFUL TO THIS CHILD?

 WHAT IS YOUR DIAGNOSIS OF THIS CHILD'S CON-
 DITION?
 WHAT IS THE PROBABLE CAUSE?
 ARE THERE ANY RELATIVES WITH EYE DEFECTS?

 REMARKS:
 O. D. O. S.
 RECOMMENDATIONS:
 1. PUBLIC SCHOOL.....
 2. BLIND SCHOOL.....
 3. SIGHT SAVING CLASS—with or without glasses

 4. AMOUNT OF EYE WORK PERMISSIBLE
 EXAMINERM.D.
 ADDRESS
 DATE.....

This form is suggested by the Illinois Society for the Prevention of Blindness.

The recommended basis for admission of pupils to sight saving classes by the Illinois Society for the Prevention of Blindness is:

RECOMMENDED BASIS FOR ADMISSION OF PUPILS TO SIGHT-SAVING CLASSES

For your information—No standard for admission to sight-saving classes has as yet been adopted by the Illinois Society for the Prevention of Blindness. In the meantime, we give herewith the standards proposed by a special committee approved by the National Organization for the Prevention of Blindness in July, 1928.

1. Children having a visual acuity of 20/70 or less in the better eye after proper refraction. In addition, the following are recommended as potential candidates:

(a) Children in elementary schools having *four or more diopters of myopia*.

(b) *Inactive, subsiding (or regressive) cases, such as interstitial or phlyctenular keratitis, optic neuritis, trachoma, etc., in which some irritation may be present, provided the approval of the attending physician is given.*

2. All cases must be considered individually.

3. Any child who, in the opinion of the ophthalmologist would benefit by assignment to a sight saving class, subject to suggestion for treatment and training by such ophthalmologist, and the acceptance of the educational authorities having charge of such classes.

4. It is assumed that all children assigned to sight-saving classes have *average normal mentality*.

Winifred Hathaway, Associate Director of National Society for Prevention of Blindness, says:

"The experiences of the twentieth century would seem to indicate that the sight saving class is the best method yet developed for educating partially-seeing children, since it approximates as nearly as possible the education of the normally-seeing. It would seem almost unnecessary to have to justify the cost of the education of any child who is educable; humanitarianism alone would seem a sufficient justification. Yet it must be remembered that the State is responsible to the taxpayers for the use of public moneys; in consequence, the State must look upon expenditures for education as an investment that will pay justifiable dividends. The object of educating partially-seeing children is the same as in the education of any group; namely, to prevent illiteracy and to develop the innate powers of the individual so that he will become an asset of the greatest possible value to himself and to the State.

"To give a partially-seeing child an even chance with the normally-seeing, it is necessary to provide him with the opportunity to overcome his handicap. In order to do this, such facilities must be at his command as will permit him to develop along the line of his greatest strength, while his weakness, in so far as this

is possible, is prevented from becoming worse."

The responsibility is largely ours in making the decision as to whether this child shall go to the School for the Blind or if sufficient vision is present and the eyes in fair condition shall go to the public school or to a sight saving class. If no sight saving class is available to you, what can be done toward having one?

Schools for the blind are doing a wonderful work and prove the great advance in civilization in the last century. The development of sight saving classes is the next forward step.

If by our combined efforts we can further a plan by means of which certain handicapped individuals may acquire an education and select a vocation as nearly along normal lines as possible, it will be well worth while.

DISCUSSION

Dr. Harry Gradle, Chicago: I trust that when this paper is published, all of you will sit down and study it carefully, because there is a great deal that is of interest to us. Dr. Adams was kind enough to send his paper and allow me the opportunity of going over it carefully. It represents a great deal of work and careful thinking on the part of a man who is in a position to study the problem, and who has a far greater comprehension of the situation than any of the rest of us.

There are two phases I wish to speak of. The first is the definition of blindness. That is a question of relativity, just as is the question of a man's financial position. Eighteen hundred dollars a year is "absolutely broke" for a man in the city, whereas in a small town he may live comfortably on that, and in the jungle he is a multimillionaire. With blindness it is the same. What is the eye to be used for and how much vision is necessary? There are four separate phases of blindness: no light perception or projection, there can be no argument about that. Economic blindness, in which the individual is so handicapped that he is unable to conduct himself in his daily routine, not able to walk about, not able to feed himself; apparently the limit is about 20/800. Below that is economic blindness. Industrial blindness on the other hand involves a different factor. For a man to be able to carry on his work the amount of vision depends on the character of the work, but it may be said that 20/360 is the limit of industrial blindness. On the other hand, for educational blindness we have a different amount of vision. For ordinary school work, a child to be able to carry on should have in his best eye corrected with glasses, 20/70. If the vision is below 20/70 that child is not able to carry on with the others, therefore he belongs in the sight-saving class. The limits of the vision necessary for the sight-saving classes are still somewhat in the air, but I can tell you that in Illinois between 20/70 and 20/200 in the best eye with correction is required.

Dr. Adams spoke at some length of the situation of the blind. Thanks to his courtesy I have recently had the

opportunity to go over the inmates of the school at Jacksonville. I can speak very feelingly about this, because the children are sent there regardless of the help that might be given by an ophthalmologist. They are wished on the school and the attending ophthalmologist has no authority to reject the children because of their having too good vision, nor to institute corrective measures to restore that child to the sighted world. I think that will be changed, and that the children who come will have to pass the examination of the attending ophthalmologist, who, above all others, is capable of ascertaining whether that child should be admitted to the school or not. Again, there are too many children who could be returned to the sighted world through surgical measures, thereby saving the enormous costs of blind education.

Admission to the school has been extremely lax from the ophthalmological standpoint in the past. I believe children admitted to a school should have an examination and a certificate from a man who is a member of the Eye, Ear, Nose and Throat Section of Illinois State Medical Society. Consequently, it behooves us who examine children and give them certificates, to be more careful.

I trust you will sit down and study this paper of Dr. Adams'. I did so with a great deal of profit. It will be very much to the advantage of the Illinois Medical Society and to the blind school population of this state if you will follow out the suggestions made. I am also going to make the suggestion that the Chairman and Secretary of this Section should be authorized to collect the names of all members of the Illinois State Medical Society who have registered in the Eye and Ear Section, who are recognized as Eye and Ear specialists in the state and have that list published in the Illinois Medical Journal. There is no such list available at present.

Dr. George Francis Suker, Chicago: I think this is one of the most interesting papers presented before this Section for a long time, and Dr. Adams has given some information regarding the Blind Institution that many of us did not know. I have been particularly interested in the children in sight-saving classes in Chicago, and fully realize the difficulty in handling them. I had the opportunity and pleasure to visit Jacksonville and see the handicaps under which Dr. Adams is working, and what limitations in power and discretion the State imposes upon him. Strange as it seems, and wrong as it is, the state has no power as yet to compel the parents of minors who have very deficient or defective vision, to have that child properly treated if it has a condition that can be remedied to a certain extent, and thus prevent its going into the blind school. There should be a law not only in this state but in all states governing this situation. In the first place, these children have no voice in coming into the world, and in the second place, when they are in the world they are not the exclusive property of the parents, but are also the property of the State, economically speaking, and, this being the case the State should have the right to say that the individual should, if possible, be put into such a condition so as to be able to earn his bread and butter, or at least put it into the seeing class of children. There should be a board of competent ophthalmologists, and if they decide that a child should be operated on, the parents should be forced to have that child operated on, in a public or

private institution. It is a question to be carefully taken up by the Society for the Prevention of Blindness as well as by this Section. This Section is represented in that Society, and should present this problem for their consideration. Often the certificate of blindness as now filled out is absolutely fallacious in this State. Dr. Adams has demonstrated that beyond peradventure of any doubt. Furthermore the compensation of the blind, as now conducted in the City of Chicago, is quite ridiculous, and unfair to both applicant and state. There are people receiving \$300 a year who are not industrially blind, not even economically blind. I know of a few with cataracts who could be operated on and be relieved and thus not graft on the State. I think that is a matter this Society for the Prevention of Blindness should look into, in conjunction with the Chicago Ophthalmological Society. I suggest that a committee or a number of the members of this Section be appointed by the chair to cooperate with and function with the Society for the Prevention of Blindness in these matters. It is a social as well as an economic affair, and should be conducted and managed by eye men. This Society is a private concern, not a governmental organization. And, as the Illinois Medical Society is a State affair and functions as such, it ought to be represented, and have a voice in the matter as to the disposition of these children. I suggest that the matter be looked into and steps taken to conform with the ideas I have suggested, provided the Section deems it fit and proper.

Dr. L. R. Mellin, Chicago: The preceding speakers have all mentioned "What is blindness?" The Industrial Act of the State of Illinois gives 20/200 as industrial blindness, and such an individual receives compensation for total loss of vision. This unscientific figure is unjust both to the employer and employee and should be corrected. I think it behooves this body to adopt a resolution and send word to proper officials of the state recommending that the standards adopted by the American Medical Association be considered as standard in determining industrial visual efficiency.

Dr. G. H. Mundt, Chicago: Bad as the condition is in the State of Illinois, many of us know that it is much worse in some other states as to the percentage of loss of vision. All of us will admit that 20/200 is not properly an industrial blindness. In the state of New York they will rule that a man who has 20/30 vision has two-thirds; 20/50, two-fifths. That is the way they settle their claims in the state of New York.

We should be very politic in the handling of this matter. If we are going to try to get revision of this thing we should be cautious. I will say one thing, I believe ophthalmologists are to a considerable extent responsible for their own difficulties. I notice that practically every man who reports vision gives it as 20/50's or 20/200th. We should not report vision as fractions. If we do the layman is justified in thinking we know what we are talking about, and if a man has 20/30 he has two-thirds. I think we should be pretty cautious in throwing anything more into the Industrial Board than we can help. Right now, it is dangerous.

Dr. Harry Gradle, Chicago: I do not agree with Dr. Mundt that it is dangerous at all. Our compensation laws so far as ophthalmological work in this state is

concerned are hopelessly inadequate, out of date and unscientific. So far as I know, and I speak with paternal pride, the compensation tables adopted by the American Medical Association are as nearly a fair and scientific method of adjusting compensation as they can be made today. Sixteen states have adopted this method. A fair share of insurance companies are working with this table as a basis. There is no reason why we have to handle an outrageous situation with kid gloves. It is perfectly true that we are in this situation through our own fault, but that is no reason why we should not try to get out of it. I am in sympathy with the idea that we endeavor to bring about a modern estimation of compensation in this state, and I would like to second Dr. Mellin's motion.

Dr. L. R. Mellin, Chicago: I have done some little eye work in connection with some insurance companies in Chicago, and have had contact with the last Industrial Commission and also the present one. The present one is a very fair-minded body, and is looking into the situation quite intelligently, and they have spoken to me on some of these matters. I know the Governor himself has expressed a desire to revise the present statutes, not only in relation to the eye. I do not think it is a question of being politic, and I do not think the medical profession in dealing with medical questions has to be politic.

THE AD-MAN LOOKS AT LOVE

Birth control is today one of the facts of American life. It is practiced, or at least attempted in some form, almost universally.

But the laws remain on the statute books. The shadow of the taboo remains, and in this shadow the advertising "profession" operates what is probably the most flourishing racket in America, now that Capone is in jail and legal beer is imminent.

In the files of Consumers Research I counted leaflets advertising some fifty different antiseptics and other contraceptive products, and in the files of the National Committee on Maternal Health, some fifty more. Neither organization attempts to list them all; the total probably runs into thousands. Each is represented to be a convenient, safe and reliable contraceptive. Meanwhile, the gynecologists of the world are patiently searching for precisely such a thing and say they haven't found it.

In the earlier stage of feminine hygiene campaigns the language of the ad-men was full of euphemisms, of indirection, of tender solicitude for the sad-eyed wives pictured above such captions as "The very women who supposed they knew are grateful for these enlightening facts." But recently the pressure of competition has speeded up the style. "Now it can be told," they declaim, and "Why Mince Words?"

Some of them don't; for example, the ad-man for Pariogen tablets, who writes the following chaste communication, addressed presumably to the automobile trade:

"Pariogen tablets may be carried anywhere in a purse, making hygienic measures possible almost anywhere, no other accessories or water being required."

—James Rorty, in *Common Sense*.

EARLY CARE OF PARALYSIS FROM ACUTE ANTERIOR POLIOMYELITIS*

An Analysis of the Program in Twenty-two Orthopaedic Clinics and Hospitals

EDWARD L. COMPERE, M.D., AND

MARGARET S. CAMPBELL, R.N.

CHICAGO

The care of the paralyzed patient during the period just following the acute stage of an attack of anterior poliomyelitis has been emphasized in text-books and treatises, most of which were written by and for orthopaedic surgeons. Almost all of these surgeons agree that the most important consideration is protection of the involved extremities and prevention of deformities. Methods and the value of supportive measures have been debatable issues. Legg and Merrill,¹ Todd,² and Porter³ have quite recently published treatises which emphasize some of the principles of treatment advocated in this clinic. In the hope that we might receive some valuable suggestions for the care of our own patients, a brief outline of the procedure followed in the Orthopaedic Division of the University of Chicago Clinics was sent to the Chairman of some of the larger orthopaedic services with a request for criticism of our program and discussion of procedures found helpful in their own clinical experience. Replies were received from the following orthopaedic surgeons:

Dr. Fred Albee, New York, N. Y.; Dr. Willis Campbell, Memphis, Tenn.; Dr. Frank Dickson, Kansas City, Mo.; Dr. F. J. Gaenslen, Milwaukee, Wis.; Dr. Wm. Edward Gallie, Toronto, Canada; Dr. R. I. Harris, Toronto, Canada; Dr. Vernon L. Hart, Dayton, Ohio; Dr. M. Henderson, Rochester, Minn.; Dr. R. A. Hibbs, New York, N. Y.; Dr. Michael Hoke, Warm Springs, Georgia; Dr. Frederick C. Kidner, Detroit, Michigan; Dr. C. Leroy Lowman, Los Angeles, Calif.; Dr. Leo Mayer, New York, N. Y.; Dr. John R. Moore, Philadelphia, Pa.; Dr. Frank Ober, Boston, Mass.; Dr. Robert B. Osgood, Boston, Mass.; Dr. Charles W. Peabody, Detroit, Mich.; Dr. John L. Porter, Evanston, Illinois; Dr. Robert D. Schrock, Omaha, Nebraska; Dr. Arthur Steindler, Iowa City, Iowa; Dr. George Wagoner, Philadelphia, Pa.; Dr. Royal Whitman, New York, N. Y.

The procedure in the University of Chicago Clinics which was submitted for review was planned to include four periods of treatment. Each phase of the early care of the paralysis as practiced in this clinic is submitted here, together with a summary of the replies received from the above named surgeons.

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1. *Immediately after the acute illness has subsided and further spinal punctures are un-*

likely, a plaster of Paris cast is put on including all parts of the body which show any suggestion of involvement. This frequently includes a complete body and bilateral leg cast while the arms are placed in a position of abduction and external rotation. This complete immobilization is maintained for a period of from four to six weeks.

NOTE: Cast is usually bivalved within a week after application and used as plaster splints or shells.

Comments: Of the twenty-two replies to the questionnaire, all were in agreement with the general principle of early protection of the weakened extremities and attempts to promote rest and relaxation. Only ten of the twenty-two stated that they used casts or plaster shells and three of the surgeons felt that any attempt to splint the limbs was useless.

The following orthopaedic surgeons stated that their initial plan of treatment coincided with this outline: Drs. Albee, Campbell, Dickson, Henderson, Hibbs, Moore, and Schrock.

Some additional suggestions or variations in methods included:

Dr. Gaenslen:—"While plaster cast immobilization has been frequently advised, especially the plaster bed advocated by Lange, I have not used it and doubt if there is real advantage."

Dr. Gallie:—"Splinting is recommended and 'In some cases it is undoubtedly useful but in many it proves worthless since the deformities develop in spite of the wearing of both night and day splints.'"

Dr. Harris:—"I do not use plaster unless the problem of fixation is such that it cannot be solved by simpler means and this is rare. Relaxation of paralyzed muscles is the aim to be striven for, not absolute fixation."

Dr. Hart:—"During the tender phase, which, in our group of patients has averaged a period of four to six weeks, we remove the fixation apparatus once daily and place the child beneath warm water in the ordinary bath tub. During this phase, we do not apply massage and we do not attempt to test the degree of paralysis in the affected extremities. While under water, the child is encouraged to actively move the various joints within the limits of pain. It has been our experience that the daily warm bath tends to shorten the tender phase and aids in the prevention of contractures."

*From the University of Chicago, Department of Surgery, Division of Orthopaedic Surgery.

Dr. Hoke:—Questions the advisability of long periods of complete immobilization in plaster casts. "There is quite a bit of turmoil to the patient in having a double *spica* applied; it means quite a bit of handling. Applying a plastic splint to an extremity, with the idea of holding the extremity in a neutral position, is not much tax on a patient, and is, of course, in order."

Dr. Kinder:—"I prefer Bradford frame and plaster shells or wire splints."

Dr. Lowman:—"In the first place I would suggest the immediate use of splints, either short or long legged, preferably long, with very slight slacking off at the knee, about five degrees, to give the patient comfort. If he is in a good deal of pain and there is difficulty in controlling the muscle spasm, then plaster casts can be put on and bivalved early."

Dr. Mayer:—"There is one feature of treatment which I should like to recommend to you and that is the application of *balanced traction*. Plaster shells are made as supports for the lower and upper extremities. These have hinges at the knee and ankle and are so arranged that they can be suspended from a Balkan frame. Even with minimal strength in a muscle, it is possible if the limb is properly balanced to have the patient perform motion in all directions. This we find adds considerably to the rapidity of recovery."

Dr. Ober:—"It is only rarely that we apply plaster casts for extensive paralysis. The application of a cast for extensive paralysis usually takes so much out of a child and increases its tenderness so much that we have always thought it was detrimental."

Dr. Osgood:—"We bivalve the plaster casts as soon as they have set since we think their only purpose should be to retain the limbs in such position as to prevent deformity, but not perhaps to absolutely completely immobilize. I think the atrophying effect from a complete cast is greater than from a cast in which there is at least a little possibility of movement and the disturbance of circulation is still greater from a complete cast left on four to six weeks. It is often a comfort also in the earlier stages to be able to apply heat either by baking, hot water bottles or electric pads."

Dr. Peabody:—"Personally I am very much convinced that during the subacute phase every effort should be made to eliminate ascending

stimuli (which may travel through motor as well as 'sensory' pathways) and nothing does this so well as heavily padded plaster, as well as conserving heat."

Dr. Porter:—"This is the stage when nursing care and splinting are most important, and mild, gentle massage may be begun. It is during this early stage that two things must be borne in mind—the danger of fatigue and of contractures."

Dr. Steindler:—"Casts are rarely applied during the acute and subacute stage. Recumbency in involvement of the lower extremities continues, according to severity, from six weeks to four to six months."

Dr. Wagoner:—"The affected part or parts are immobilized by plaster shells, not casts, with the affected muscles in the position of maximum relaxation. The use of splints or shells are found to be better than a solid or circular cast as they permit more careful watching of the skin. At this period external heat is constantly maintained through the medium of a cradle illuminated with electric bulbs, preferably those with carbon filaments."

Dr. Whitman:—"It would appear that fixation of the spine during the inflammatory stage might be indicated since movements of the trunk often cause pain."

Todd² states that "In the acute stage of infantile paralysis, complete rest and relaxation of the affected muscles constitute the one and only indication in treatment as far as the orthopedic aspect of the case is concerned. Massage and electrical stimulation are undoubtedly valuable in the later, more chronic, stages of the complaint, though even there they are of less relative importance than the continuous protection of the damaged muscles by relaxation in appropriate appliances. If one had to choose, at any stage of infantile paralysis, between efficient splintage and any other method of treatment, the preference should undoubtedly be given to splintage." We disagree only with the suggested use of electrical stimulation.

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2. *Physiotherapy is started. As long as there is persistent cutaneous "stroke tenderness" this treatment is confined to warm salt baths. The patient is allowed to move about under the water (observations can be made as to the muscle power) but muscle reeducation with definite ex-*

ercises is not begun until cutaneous tenderness disappears.

Comments: Agreement with no additional suggestions or changes in procedure: Drs. Albee, Campbell, Dickson, Gaenslen, Henderson, Hibbs, Kidner, Mayer, Moore, Osgood, Peabody, and Schrock.

The following were additional suggestions made by the ones indicated:

Dr. Gallie:—"My general impression is that massage is useless and that prolonged and expensive treatment in the form of muscle re-education, exercises in salt water and so on ends up with about the same result as if patient had never been treated at all."

Dr. Harris:—"Though I use physiotherapy, I am not greatly impressed with its value. Relaxation of the paralyzed muscles is the most important form of treatment by long odds."

Dr. Lowman:—"During the first week we make a very careful test of all the muscles to determine the extent of involvement, check the kidney condition, which in many cases shows nephritis, and commence physiotherapy, the type and amount being determined by these findings. Of late years, when the case is a mild one, we have been starting them in the new under water gymnasium for pool treatments as early as the middle of the 4th week. Probably a high percentage of the cases are started in the 5th week.

"We consider the skin tenderness and muscle soreness as a guide and always make an effort not to produce any pain, depending upon the patient's voluntary efforts for the movements."

Dr. Ober:—"No physiotherapy is started until all the tenderness has disappeared, and that means deep tenderness, and the best test for deep tenderness, in my experience, is passive straight leg raising. During the tender stage patients are put in warm baths and allowed to move as much as possible without any assistance."

Dr. Porter:—"Begin massage very guardedly, as too much massage is as fatiguing as exercise."

Dr. Steindler:—"Physiotherapy and under water muscle training is started with the disappearance of the sensory symptoms, two weeks to two months after onset; same is true of muscle re-education."

Dr. Wagoner:—"Approximately three weeks

following the onset of the disease the patient is started on daily hydrotherapeutical treatments consisting of immersion in hot salt water of a temperature approximating that of the body and of specific gravity equal to that of sea water. Neither active nor passive motion is permitted at this time; the duration of immersion is gradually increased from five minutes to an hour. After the disappearance of cutaneous tenderness, gradual passive motion is instituted. Following the daily baths the affected parts are replaced in their shells or splints and the external heat is maintained."

Dr. Whitman:—"I think massage and exercise may be deferred until the stroke tenderness has disappeared."

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3. *Muscle re-education is given at first under water with light massage after the bath. This is very carefully supervised and every precaution is taken not to fatigue any muscle group. During this period the affected extremity is supported either in plaster shells or metal splints and the patient is kept upon a Bradford frame. The apparatus should be removed for a period each day and the patient's position changed, so that full range of joint motion may be maintained.*

Comment:

The following replies were in agreement and suggested no additions or changes in procedure: Drs. Albee, Campbell, Dickson, Henderson, Hibbs, Hoke, Kidner, Mayer, Moore, Osgood, Peabody, Schrock (emphasized that they must be comfortably splinted), and Wagoner.

Additional suggestions were made as follows:

Dr. Gaenslen:—"I would not favor the Bradford frame as a proper mattress is more comfortable and allows the slight shifts in position which, I am sure, contribute to comfort more than unusual convexity of the frame."

Dr. Harris:—"I concur in this though I do not think under water exercises very important except for the psychic effect upon the patient and parents."

Dr. Lowman:—"It has been our experience that the patient is quite drowsy after a period in the warm water, and I believe that in most instances if the patient can take advantage of this relaxation and have a period of rest and sleep following such a treatment it is of much more benefit than the massage. If such a treatment

is given as a heat treatment preliminary to muscle re-education, that is a different thing, but in the early cases, I feel that it would be just as well to be quickly dried off and allowed to sleep for an hour."

Dr. Ober:—"Until the disappearance of deep tenderness, patients at the Children's Hospital are put in the tank and allowed to move themselves."

Dr. Porter:—"As soon as paralysis is stationary begin muscle exercises and education, *not before.*"

Dr. Steindler:—"Muscle re-education both under water and on plinth; initial care should be exercised; splinting must be rigorously maintained, outside of treatment periods."

Dr. Whitman:—"The prevention of deformity is of far greater importance than exercise." *University of Chicago Clinics*

4. *Muscle re-education is begun from two to three months after the onset of the disease. When deep tenderness has disappeared, the program of exercises can be given alternately on a table and in the water, gradually increasing the treatment in accordance with the patient's tolerance. The massage can then be somewhat deeper than at the beginning. This treatment is continued as long as there is evidence of improvement, usually from one to three years.*

The following replies were in agreement with the outline of the fourth phase of treatment: Drs. Albee, Campbell, Dickson, Gaenslen, Henderson, Hibbs, Hoke, Mayer, Moore, Osgood, Schrock, Steindler, and Wagoner.

The additional suggestions or variations in methods included:

Dr. Gallie:—"When the stage of tenderness is over we allow the patients to start in to use their muscles as much as they will."

Dr. Kidner:—"I agree in general but feel that the first section is unnecessarily rigid."

Dr. Lowman:—"We have concluded, after many years of experience, that the second six weeks of convalescence is the most vital part of the whole treatment period. It is during this time when atrophy from disuse sets in in the trunk muscles, particularly. The inherent objection to muscle action produced by pain and muscle spasm undoubtedly assists in this process of atrophy. It is during this time that a knee, unless absolutely controlled, tends to show the early aspects of stretch palsy,—which would be

aggravated by the full joint range just spoken of."

Dr. Ober:—"There is no set time at which muscle re-education can be commenced. If the deep tenderness lasts for six or eight months, muscle re-education is not instituted until after that has entirely disappeared. The water exercises are better for those patients who are severely paralyzed. Those with mild paralysis do not need to go in water at all. No massage whatever is given during tenderness. Improvement continues indefinitely. I have had a shoulder deltoid come back five years after the onset of the paralysis."

Dr. Osgood:—"We occasionally begin some form of muscle re-education before all cutaneous tenderness disappears but not in the region where the cutaneous tenderness exists; usually not in the same limb where the cutaneous tenderness exists. We are often able, therefore, to begin muscle re-education at the end of a month and we do not always delay it over the two or three months that you suggest. Each case must be a law unto itself, of course."

Dr. Porter:—"As soon as active use of the paralyzed member is permitted, braces must be devised and prescribed for each case."

Dr. Steindler:—"Muscle re-educational training is started about the same time as exercises are graded; also massage, until no further traces of improvement."

Dr. Wagoner:—"With the disappearance of 'deep pain,' muscle education is started along the manner outlined by you. Usually about four months after the onset of the disease we are able to fit the individual with braces and make him ambulatory, unless of course, the paralysis is too extensive. The use of electricity in muscle re-education has been abandoned."

Dr. Whitman:—"I am inclined to think that voluntary use of protected limbs is more important in the regeneration process than muscle training. This is important chiefly because it keeps the patient under constant observation and if it does not widen to much expense of time and money it may be advisable."

Several of the orthopaedic surgeons to whom this outline was submitted added additional information in discussing the length of time after the onset of acute poliomyelitis with involvement of the lower extremities that weight bearing was permitted. There was almost uniform

Outline of Opinions on the Early Care of Infantile Paralysis

Comment	Name	I Complete immobilization of involved trunk or extremities	II Begin active movement under water	III After stroke tenderness disappears increase under water exercise and add light massage	IV After deep tenderness disappears increase exercise and massage to patient's tolerance
"Approve in every particular."	Albee, Fred	Agrees	Agrees	Agrees	Agrees
"Concur absolutely." Suggestion on active function.	Campbell, Willis	Agrees	Agrees	Agrees	Agrees
"Correspond exactly to our ideas."	Dickson, Frank*	Agrees	Agrees	Agrees	Agrees. "We generally allow weight bearing at the end of," etc.
	Gaenslen, F. J.*	Does not use plaster cast	Agrees	Prefers the Bradford frame to splints at this stage.	Agrees
	Gallie, W. E.*	Uses splints to "prevent contracture of recovering muscles and stretching of more paralyzed ones."	Uses water treatments at Children's Hospital but not impressed with it.	Believes that massage is useless.	Permits patients at this stage to use muscles as they will.
	Harris, R. I.*	Prefers relaxation of muscles to absolute fixation.	Uses this but not greatly impressed with it.	Agrees. Believes psychic effect is important.	Agrees.
"Essentially the same as we apply in our department."	Hart, Vernon L.*	Uses either plaster splints or Bradford frame.	Agrees	Agrees	Agrees
"I agree with everything in principle."	Henderson, M.	Agrees	Agrees	"I believe that the muscle education can be started as soon as the tenderness has left, but one, of course, must be guided by the patient's tolerance."	
"Plan excellent, nothing to contribute to it."	Hibbs, R. A.	Agrees	Agrees	Agrees	Agrees
	Hoke, Michael*	Objects to prolonged complete immobilization.	No comment	Agrees	Agrees
	Kidner, Frederick C.	Prefers Bradford frame and plaster shells or wire splints.	Agrees	Agrees	"I agree in general but feel that the first section is unnecessarily rigid."
	Lowman, C. Leroy*	Prefers splints	Emphasizes need to avoid stretching of involved muscles.	Careful not to produce pain. Active movements only.	Exerts care to avoid stretch palsy.
"Corresponds in most of details with that followed by me."	Mayer, Leo	Agrees	Agrees	Recommends—"Balanced traction."	Agrees
"Routine concurs with yours and can offer no suggestions."	Moore, John R.	Agrees	Agrees	Agrees	Agrees
	Ober, Frank*	Objects to cast for extensive paralysis.	Agrees	Active movement only until deep tenderness disappears.	Concurs, but emphasizes that "no massage whatever is given during tenderness."
"In essential accord."	Osgood, Robert B.*	Bivalves cast early. Advocates heat for involved limbs.	Agrees	May begin exercises before cutaneous tenderness disappears but not in the region where the cutaneous tenderness exists.	May begin muscle re-education in certain extremities at the end of a month.
Agrees with principles	Peabody, Chas. W.*	Agrees	Agrees	Agrees, with additions	Agrees
Agrees in general.	Porter, John L.*	"Rest is most important."	Permits tub bath in warm salt water.	Agrees with principle.	Warns against muscle fatigue.
	Schrock, Robert D.	Agrees	"Good"	Must be comfortably splinted.	"Excellent."
Agrees with the principles outlined.	Steindler, Arthur*	"Casts are only rarely applied."	"I agree with your method of treatment."	"Yes, but splinting must be rigorously maintained outside of treatment periods."	"Essentially identical with yours."

*For detailed answers see text.

Outline of Opinions on the Early Care of Infantile Paralysis—Continued

Comment	Name	I Complete immobilization of involved trunk or extremities	II Begin active movement under water	III After stroke tenderness disappears increase under water exercise and add light massage	IV After deep tenderness disappears increase exercise and massage to patient's tolerance
	Wagoner, Geo.*	"Plaster shells, not casts with the affected muscles in the position of maximum relaxation."	Advocates hot salt water baths but neither active nor passive motion.	Agrees	Agrees, with additions.
Your routine "consensus of opinion."	Whitman, Royal*	Agrees	"Massage and exercise may be deferred until the stroke tenderness has disappeared."	"The prevention of deformity is of far greater importance than exercise."	"Voluntary use of protected limbs is more important in the regeneration process."

agreement that this should be deferred until several months had elapsed.

Dr. Campbell:—"You did not mention just when you begin active function, as weight-bearing and active use of the upper extremities without support. We usually do not begin any weight-bearing until after the elapse of six months time, and then, of course, with the proper apparatus, which should be as light and as little as possible. In the upper extremity, we do not leave off support until the individual can actively use the parts to some extent; for instance, the shoulder should be abducted by voluntary movement to about 90°."

Dr. Dickson:—"We generally allow weight bearing at the end of three months and prefer braces at this time to rigid supports, but otherwise I have nothing to add to what you do."

Dr. Harris:—"You make no mention of the important problem of when weight bearing should be permitted and what safeguards are necessary to prevent or minimize deformities. I think this much more important than physiotherapy."

Dr. Lowman:—"Many Doctors, because they know that continuous bracing tends to make atrophy encourage patients to get along without braces, and by so doing encourage overstretch palsy, allow the patient to carry a very high degree of motor and organic strain due to increased work, and do not realize that there is a happy medium."

Dr. Peabody:—"There may be some advantage in determining as early as possible the probable major residuals, and adapting fixation to put the weaker groups in maximum relaxation. Thus in lower extremity it may be preferable in the particular case to put the foot in

equinus and the knee in flexion or the hip in abduction."

Dr. Porter:—"With the active exercises and muscle training encourage independence. Never give up. Some patients remain in bed because they cannot get out alone, but with braces might walk when once upright, and there are comparatively few cases that cannot be taught to get out of bed or out of a chair alone."

Dr. Wagoner:—"Usually about four months after the onset of the disease we are able to fit the individual with braces and make him ambulatory, unless, of course, the paralysis is too extensive."

"Approximately eighteen months following the onset of the disease preliminary operative procedures are instituted. These chiefly are along the line of stabilizations and muscle and tendon transplants. It is interesting to note that we are now successfully performing stabilization operations on *children from four years of age up*. We have not succeeded, however, in obtaining satisfactory results in arthrodeses of shoulder joints in children under fourteen years of age; this constitutes, probably, the only exception to the early use of fusion or arthrodesis operations."

A study of the replies and criticisms received has been a help to us and has given us more confidence in caring for these patients. The consensus of opinion confirms our belief in the principles of protection and a conservative program of exercise and muscle re-education.

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DIFFERENTIATION OF BRONCHOGENIC CARCINOMA FROM MEDIASTINAL TUMOR*

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My purpose in presenting this paper is not to discuss mediastinal tumor, primarily, but to use the case to be presented as one of the problems in differential diagnosis of lung diseases, especially some of the problems in the differential diagnosis of primary lung cancer. Bronchogenic carcinoma seems to be increasing in importance, since an increased incidence has been reported during the past ten years, both by clinicians and pathologists. Accuracy in the diagnosis of chest diseases is not only desirable but of practical importance with particular reference to the type of treatment to be used. Tuberculosis is amenable to treatment, and the diagnosis usually carries with it a favorable prognosis, while primary lung and mediastinal malignancies are progressive, ending fatally. Modern diagnostic methods should eliminate these errors to a minimum.

The symptoms, physical and x-ray findings are being correlated from the increasing numbers of lung cancer being reported, with the hope that a definite diagnostic picture may be established.

Incidence of Lung Tumor. Primary lung cancer is the most frequent malignancy encountered in the lung and is shown to be on the increase. Older clinicians rarely, if ever, made a diagnosis of primary lung tumor and the pathologists considered the disease as rare. Post mortem statistics of recent dates compared with older figures has led to the conclusion that bronchogenic carcinoma is on the increase. "Barblinger"¹ by analyzing his material found that in the years from 1910-1914 the condition occurred in 2.2 per cent, and from 1919-1924 it rose abruptly to 8.3 per cent. The Peter Bent Brigham Hospital² in Boston, reported seven cases 1913-1927, inclusive, and 16 cases 1928-1929, inclusive. These increases are probably more apparent than real, as our diagnostic methods have markedly improved since 1910 or 1913. B. M. Fried³ Med. Dec. 1931: "The author is of the opinion that the more frequent occurrence of this disease

in recent years, as compared with older findings, can be explained on the basis of the following factors: 1. Improved clinical and pathological methods of diagnosis; 2. Increased attention to this malady, and, 3. Increase in the span of human life (a much greater proportion of the people reach the cancer age)."

The increase, then is very likely more apparent than real.

Symptoms. Tumors of the mediastinum and lung produce symptoms chiefly by pressure, which vary as to location and size of tumor. New growths in the anterior mediastinum frequently, by pressure, cause obstruction to the venous return; posterior mediastinal tumors cause pressure upon the trachea, esophagus and adjacent nerves, and those tumors (usually bronchogenic carcinoma) which extend from the lung or pleura cause symptoms according to location and size. Obstruction to the superior vena cava causes many of the symptoms of mediastinal tumors, namely cyanosis, edema of face and neck, dilatation of superficial veins, and dyspnea. The edema of the head and neck is most prominent, with relatively slight swelling of arms and hands, which Milles⁴ states, is probably the result of the auxiliary effect of the voluntary muscles in propelling the blood through the veins. The edema likewise varies as to posture and is associated with dilatation of the superficial veins.

Cough may be caused by obstruction to the trachea and bronchi from within or without, and the involvement of the recurrent laryngeal nerve. Dyspnea and orthopnea may be caused by obstruction to the trachea, or the bronchi of one or more lobes, to accumulation of fluid in the pleural space, or to stenosis of the superior vena cava. The obstruction to the superior vena cava is more frequently caused by tumors in the mediastinum (arising from the thymus, substernal medullary thyroid, carcinoma of substernal thyroid, fibroma and sarcoma) and frequently by extension of bronchogenic carcinoma into the mediastinum. Hemoptysis is due to bronchial or tracheal involvement which may be produced by obstruction from within or without, usually, of course, associated with some secondary infection. Pain is not characteristic or constant and depends upon location and extent of the growth. Pleural effusions are usually found in late lung

*Read before the Section on Medicine of the Illinois State Medical Society, Peoria, May 16, 1933.

tumor cases but not so frequently in mediastinal tumors unless there are metastases to the lung or pleura. Many cases of bronchogenic carcinoma as well as mediastinal tumors may be symptomless, at least in the beginning. The first manifest signs and symptoms may be of the metastasis. The lymph nodes, liver, bones, lungs, brain and kidneys are the most frequent sites of metastasis. B. M. Fried¹ has reported 47 cases of bronchogenic carcinoma with 16 having metastasis to the central nervous system, and 13 of the 16 cases were diagnosed as brain tumor.

Definite symptoms and signs in primary tumors of the mediastinum and lung have not been correlated. Rogers⁵ lists some of the leading findings in primary lung cancers: 1. Shrinkage of the affected side; 2. The presence of an infiltrating process, most often in the hilar region, showing a marked tendency toward peribronchial infiltration; 3. The presence of a bronchial stenosis characterized by a partial or complete atelectasis of the affected portion of pulmonary tissue; 4. Retraction of the heart and mediastinal contents toward the affected side; 5. Upward retraction of the diaphragm on the affected side; 6. In from 7.5 to 10 per cent, evidence of palsy of the phrenic nerve (more often left sided), with paralysis of the corresponding side, and an accompanying paradoxical respiration; 7. Widening of the mediastinal shadow. The x-ray is of the most value in the differential diagnosis of chest diseases. Paleviski states that a diagnosis of lung cancer may be made from the history and physical findings.

Diagnosis. Diagnosis of primary lung or mediastinal tumors may be made by exclusion, with suitable x-ray and clinical laboratory data (when the material may be made available for examination). Tuberculosis may usually be differentiated by repeated sputum examinations, history, and x-ray findings, although bronchogenic carcinoma may be superimposed upon pulmonary tuberculosis. History, physical findings and laboratory examination should rule out syphilis and other infections of lung and mediastinum. A differentiation of the type of tumor may be difficult unless cancer cells are found in pleural fluids, material obtained by puncture of the lung itself, from sputum, by sections of available involved

lymphnodes, or by biopsy from material obtained thru the bronchoscope.

Given a patient with pulmonary symptoms who is in the cancer age, who has a negative history for tuberculosis, has had repeated negative sputum examinations for tubercle bacilli, with a lesion starting at or near the hilus, with peribronchial infiltration, and retraction of the mediastinum toward the affected side, a probable diagnosis of bronchogenic carcinoma may be made.

CASE REPORT

Patient is male, forty-one years of age, married and by occupation a salesman. He was well until in February, 1931, when he became suddenly ill in a Philadelphia hotel with chills, fever, generalized aching, cough and expectoration. A house physician noted he had a temperature of 104°, and diagnosed his illness as influenza. It was necessary for him to remain in the hotel for 4 or 5 days, before he could return home. The cough continued, although he felt well except he tired easily. His condition remained the same until in September, 1931, when he consulted a physician because of blood spitting. An x-ray of his chest showed a fan shaped area of increased density which radiated from the hilus into the upper right lobe. The patient was hospitalized for 2 or 3 weeks, with the probable diagnosis of tuberculosis, although no tubercle bacilli were demonstrated in the sputum. He was discharged as improved; was apparently well until January, 1932, when he again expectorated blood, and he then entered a tuberculosis sanatorium, where repeated sputum examinations failed to demonstrate tubercle bacilli. Patient had complained of pain in the region of the right shoulder, and after four or five days in the sanatorium, had a rather large hemoptysis which was repeated several times. He could not lie flat in bed because of dyspnea and because of dizziness. Edema of neck and face was noted which changed from side to side depending on position. He was then transferred to a general hospital. Swelling of the neck and face became more marked, difficulty in breathing was more noticeable, had to sit up in bed. The paroxysmal cough was more marked and distressing. The right upper portion of the chest was flat to percussion which extended 2 or 3 cm. to the left of the left border of the sternum. The breath sounds over this area were diminished, no rales heard, the left border of the heart was within the mid-clavicular line; flatness, diminished breath sounds in right lower chest, with a positive Grocco's sign on left. Fluid aspirated was straw colored, containing small amount of blood, few leucocytes and lymphocytes—no organisms found—culture negative. Microscopic examination of the centrifuged sediment did not demonstrate malignant cells. A few large oval cells (no opinion can be expressed as to malignancy) were found in material aspirated from upper right lobe of lung. Patient had a slight elevation of temperature but not daily except about 10 days before death when an area of bronchopneumonia was noted in left lower. No abnormal

findings were noted in abdomen on entrance to hospital but the liver was found to be about three fingers below costal border three or four weeks before death. Patient shortly before had complained of pain in upper right quadrant and in region of the right hip.

The pupils were equal but somewhat dilated, reacted to light and accommodation, eye grounds were normal, there was a marked edema of neck, face and eye lids with marked dilatation of veins extending down to about the angle of Lewis. A number of supraclavicular lymph nodes were palpable—one was removed for section but malignant tissue was not demonstrated.

Laboratory examinations were not of much help in diagnosis, except x-ray. April 7, 1932, R. B. C.—4,550,000 with 85% Hb. Dare. May 18, 1932, R. B. C.—3,460,000 Hb. 60% Dare. Differential count was essentially normal except shortly before death when a slight increase in neutrophils was noted. Blood urea—14.010, April 7, 1932. Kidney function 55%. Sputum—negative for tubercle bacilli on various occasions. Sputum was somewhat gelatinous at times, was never examined for malignant cells. Urine, April 7, 1932: Albumin, trace. Few pus cells. April 18, 1932, Albumin 4 Plus, Blood 4 Plus. Kahn and Wassermann tests on blood serum—negative. Patient was treated with deep x-ray therapy without results, although treatment was started late in the disease.

COMMENT

The case illustrates the difficulty in differentiating bronchogenic carcinoma, and is of interest because the infiltrative process from the hilus initiated the early symptoms, later causing obstruction of the superior vena cava and obstruction to the right upper bronchus, causing a complete atelectasis of the right upper lobe.

X-RAY REPORT

Films taken, September 24, 1931, show a dense fan-shaped shadow radiating from the right hilar region upward and outward into the upper lobe of the right lung. The outline is irregular, indistinct, and feathery. The appearance is not that of an exudative condition, but rather a fibrotic one, suggestive of a healing infarct or a healing tuberculosis.

The diaphragm is regular on both sides. The heart and aorta are within normal limits. The trachea is located in the mid line. There is no free fluid in either pleural sac. There is some dilatation of the lower bronchioles in the lower right lobe.

Examination, April 8, 1932, shows a complete obliteration of the right upper lobe with the condition limited entirely to the lobe and completely involving it. There is fluid in the right pleural sac, and the lower lobe on the right shows a diffuse haziness probably from perivascular exudation. The trachea at this time shows no deviation and there is no narrowing of the lumen of the main bronchus; however, it does seem narrowed.

Some lymph glands in both supra-clavicular spaces can be seen.

The x-ray findings are suggestive of some form of lesion (tumor) causing a progressive bronchial obstruction by pressure and resulting massive collapse, or possibly an involvement of the entire lobe by a tumor mass. I am more inclined to favor the former.

Apparently, however, there is neither an increased nor decreased pressure, judging from the absence of any displacement of trachea or mediastinum, and this fact makes a differential diagnosis impossible without further information.

AUTOPSY

A limited examination of the body was made. The sternum was removed with difficulty because the anterior mediastinum was adherent. There was approximately 1000 to 2000 cc. of straw colored fluid in the right pleural space and approximately 1000 cc. in the left pleural space. Pleural surface of right upper lobe was adherent and could not be stripped without tearing. There was no crepitation in right upper lobe; the lung was rather dark in color with several hard white nodules in the pleura both on the mediastinal side near the hilus and on the axillary side. A complete atelectasis of right upper lobe was found, with constriction of the right upper bronchus near the hilus, by white hard tumor masses which surrounded the bronchus and trachea. Section of upper right lobe did not demonstrate any tumor masses in the bronchus itself; a bronchitis was found. The tumor mass extended up into neck, surrounded the vessels of the mediastinum and partially constricted the superior vena cava to about $\frac{1}{3}$ its normal size at a point shortly above its entrance into the right auricle. The tumor mass occupied most of the anterior mediastinum.

Metastases were likewise found in the liver and kidneys. The brain was not examined. The upper portion of the left lower lobe showed an area of bronchopneumonia. The kidneys were not opened, but were enlarged with white hard nodules in the parenchyma. The heart did not show any gross pathological changes. The skull was not opened.

TISSUE EXAMINATION FROM MATERIAL REMOVED IN AUTOPSY

Lung: The tissue is composed of a dense more or less hyalinized fibrous stroma, in the large meshes of which are well-stained, round to ovoid cells, and in areas spindle cells having a poorly defined cytoplasm. The nuclei are vesicular. There is but little intercellular substance associated with these cells. They are not clearly defined from the stroma, and occasional areas of central necrosis is seen. Some of the cells reach a large size, while there is seen a considerable number of mitotic figures. Small blood vessels are moderately abundant, and at some points the tumor cells themselves appear to form vascular channels.

Liver: The liver parenchyma has been replaced in areas, poorly defined, by a collection of round to ovoid tumor cells. The latter have vesicular nuclei, granular cytoplasm, and show a tremendous number of mitotic figures. These areas contain a moderate number of delicate blood vessels.

Diagnosis: Round cell sarcoma with metastasis to liver.

CONCLUSIONS

1. Lesions of upper lobes of lung should not be diagnosed tuberculosis, unless confirmed by proper x-ray interpretation or by finding tubercle bacilli in sputum.

2. All brain tumors should have x-ray examination of chest before operation, to rule out bronchogenic carcinoma.

3. Bronchogenic carcinoma does not give a definite clinical picture, at least pathognomonic signs and symptoms have not been correlated, to date.

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DISCUSSION

Dr. Herman Cole, Springfield: Dr. Newcomb's paper does not leave very much to discuss because it covers the ground very thoroughly. I have only one or two small points to emphasize.

The incidence of these tumors seems to be on the increase. However, I feel that by obtaining more autopsies in the last few years and by the better feeling of the lay people toward autopsy during this time we have brought to diagnosis a good many cases that would otherwise have been diagnosed as tuberculosis or bronchiectasis. Most of the cases I have seen have been between the ages of thirty and forty. There are very few over and very few under that age; that is, of the pulmonary bronchogenic type. Most of the patients we have seen have come in because of dyspnea. Watching these people over a period of several years, we believe that from the time of the first diagnosis to the time of death they will live about six months. That is, from the time of the first dyspnea until the case has run its course.

The upper lobe seems to be more frequently involved than the lower. I cannot account for that and it con-

fuses the differential diagnosis with tuberculosis. Many of these cases have been diagnosed as asthma or have been diagnosed as abscess. I do not know what your other men's experience has been, but that is ours.

I do not believe that x-ray is always characteristic, but I do think that two x-rays taken about six weeks apart will usually make a diagnosis.

As to treatment with x-ray. Surgery does not seem to do any good while x-ray does seem to help for about the first month, probably due to the fact that it relieves the bronchial spasm. You may get fooled on this because you will get apparently a recession with a good result but about a month later you will find the case will pick up and go on in spite of everything.

I appreciate Dr. Newcomb's paper very much and think he has covered the ground very thoroughly.

Dr. Benjamin Goldberg, Chicago: I would like to say a few words about the early diagnosis of bronchogenic carcinoma. Most of the case reports concerning patients with this condition, including those in which an early diagnosis is supposed to have been made, evidence lesions which are very extensive, very frequently with metastasis and quite often only recognized within a few months of a termination of the patient's life. In chest diagnosis we have stressed the importance of a definite sequential development of symptoms and signs in this condition, which enable an early diagnosis to be made. The patient is usually above the age of thirty-five and comes complaining of an irritative cough which continues and is not relieved by any of the cough sedatives prescribed. Sputum of a mucoid type is usually extruded and blood is found in such sputum intermittently. Occasionally carcinoma cells may be found. Roentgen films made at this time are negative as to any definite changes suggestive of malignancy in or about the bronchi, inasmuch as these early lesions do not stand out on the film. If the carcinomatous nodule tends to grow into the lumen of the bronchus, it reaches a point where it may just fill that lumen. During inspiration at this time, with a relaxation of the bronchial wall, air may pass this point, but during expiration, with bronchial contraction, the bronchus loses even its slight patency and the alveolar area supplied by this bronchus becomes distended or emphysematous. At this time we find on physical examination over this area tympanic resonance with suppressed breath sounds. Bronchoscopy, carefully performed, will then evidence the lesion. When complete obstruction has occurred, atelectasis immediately follows and the diagnosis at this time should be a simple affair. Pneumography, practiced with lipiodol, will also show a definite obstruction at this time.

Dr. W. H. Newcomb, Jacksonville (in closing): A number of cases of bronchogenic carcinoma have been operated on for brain tumor when the primary growth was in the bronchus itself. It is a good plan to suspect a bronchogenic carcinoma when you are dealing with a brain tumor, particularly of unknown origin. I remember one case I had not long ago who went to operation for brain tumor. At operation a secondary carcinoma was found. There was one thing we did not do in that case and that was x-ray the chest. We could not locate the primary growth.

COOPERATION BETWEEN THE DEPARTMENTS OF PUBLIC HEALTH AND THE PRACTICING PHYSICIANS*

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To attain the highest efficiency in the conservation of health and life there should be complete cooperation between the departments of public health, the practicing physicians, and the laity in general. With thorough cooperation between the departments of public health and the practicing family physicians it is always possible to secure the approval and cooperation of the public, for almost any reasonable worth-while health project.

Cooperation between practicing physician and health department is necessary to success in any public health endeavor. That principle is basic. All official relations between the two must therefore keep that end in view.

The function of the health department is to make the public dissatisfied with prevailing health conditions in every respect where improvement is economically possible. It is the function of the practicing physician to provide and supply the medical service necessary to bring about the desired improvement. This eliminates the health officer and the health worker from the practice of medicine. It places upon the medical profession a large responsibility in preventive work.

To make people discontent with present health conditions, the health officer must know with great accuracy what prevailing conditions are and must be able to demonstrate to the community leaders that improvement is possible, desirable, practicable and economical. This brings up first the matter of reports and second, the methods of demonstration.

The collection of information is a primary requirement to successful health service. The practicing physician is the only reliable and practicable source from which to obtain most of the essential information. Routine relations between health departments and private practitioners therefore begin with reports. To develop a cooperative attitude and obtain the

desired data, health officers should cultivate in doctors the habit of prompt, complete and satisfactory reports. This can be done by frequent personal contact at stated meetings and elsewhere. Legal process to compel physicians to report should be resorted to only in cases where the justice of such action would be unquestionable to the profession and public alike. Contact with physicians should be made frequently by the health officer also through written and printed communications, in order that doctors may know that the information collected is utilized and appreciated. The appointment of an active public health committee from the membership of the county medical society would be the means of greatly facilitating the development of happy relations between health departments and practicing physicians. It would be the job of the health officer to keep the committee busy. Something to this effect prevails on a state basis in Illinois, where the advisors of the Director of Public Health usually embrace representative physicians who stand high in the counsel of the State Medical Society.

That the matter of case reports can be improved is illustrated by the results of a statewide morbidity survey made two years ago, in Illinois. In this test project, which covered one per cent of the population in a house-to-house canvass, only 30 per cent of the test cases of infantile paralysis had been reported. Only 66.66% of the cases of small pox were reported two years ago. If these findings are representative we are getting only two-thirds of the cases reported at best. Various comparative studies indicate that reporting in Illinois is fully as complete as that in most other states. The health officer, therefore, in his relation to the medical profession can afford to spend a good deal of time in promoting registration of cases.

Armed with statistical and other evidence which shows the existence of reducible sickness and death rates, the health officer should go first to the organized medical profession with his facts and his program. His business is to make doctors feel that upon them devolves a very definite and large responsibility in protecting the public from preventable illness.

Doctors are educated and trained at no little expense to society. While a very considerable

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item to the individual student, the amount paid out to medical colleges in fees and tuition is but a fraction of the total cost of producing a physician under modern circumstances. All medical colleges are heavily endowed or draw large funds from public treasuries. In return for the privileges and benefits thus acquired a doctor should be made to appreciate keenly his responsibility to the public, and it is the health officer's duty to see that he does fully understand his obligations to society in this respect. Here again a public health committee from the Medical Society would prove to be a helpful medium through which to work, but a committee can never replace personal contact.

During the past four years, at the invitation of the council of the Illinois State Medical Society, I have attended most of their meetings in the capacity of State director of public health. Here we frankly discussed the public health problems, the problems of the physicians and the projects that would better the health conditions of our State. I also visited county and district Medical Societies and lay groups in practically every part of the State—in approximately four hundred meetings. This lessened misunderstandings and promoted cooperative efforts in reducing the morbidity and mortality in Illinois.

Unless the health officer goes to the physicians with his facts and his program the practitioners are apt to grow tired of reporting. It is time consuming and tedious to make out detailed case reports. When no effort is made to show the practicing physician how the information thus collected is utilized for the benefit of the community in which he lives and for his own edification, he is apt to grow careless and even antagonistic toward greater demands from the health department.

Promoting discontent among the public, on the other hand, has a profound influence over the relations between health officer and doctor. The health officer, for example, persuades a mother that her baby, at the age of six months or one year, should be protected against diphtheria with toxoid. There should be no cause of uneasiness about what attitude the practicing physician will take when the mother appears before him for further advice and the necessary service. Again, the health officer succeeds in interesting men and women in

periodic health examinations. They go to practicing physicians in good faith. If the opportunity thus created for doing the patients a real service is neglected, then nothing calculated to reduce friction and add harmony to the relation between health department and private physician has been contributed. When the health officer sends a school child to a physician for the correction of defects he should enjoy a confidence that the private doctor will accept the situation as a real opportunity, rather than dismiss the patient with an air of triviality.

These suggestions emphasize the importance of an understanding between the health department and the practitioner which is sympathetic and cooperative. To bring such relations to pass the health officer needs to spend considerable time in cultivating a cooperative attitude in the medical profession. In a good many communities, and even states, this matter has been neglected, apparently on the grounds that doctors, as such, are conversant with public health problems and await only the injunction of health officers to embark without questions upon programs offered as a remedy.

Only a short while ago, as State health officer, I brought to the attention of a county medical society in Illinois, the fact that diphtheria consistently, from year to year, caused a higher death rate in that county than in any other county in the State. The same county experienced a mortality rate from typhoid fever and an infant death rate far in excess of the State average and of neighboring counties. The doctors of that county medical society were amazed to learn of these conditions. Their attitude has been changed from one of complacent contentment with local conditions to that of active interest in proposals calculated to relieve the situation. They feel also that the health department has performed an important service to the medical profession and to the public in presenting the information and in suggesting a program to remedy matters. No physician and no medical society relishes the reputation of practicing in an area which has a health record worse than any other comparable area.

It is probable that relatively few doctors know what the infant or maternal death rate

in their community is, and how this rate compares with those of similar places elsewhere. Very few physicians know whether typhoid fever, tuberculosis or diphtheria is excessive in their localities. It would seem to be sound practice, therefore, for the health department to conduct surveys rather frequently and keep physicians well informed on all current health conditions and problems. The end in view would be, of course, to make every physician feel that he is in reality a public health officer.

Dr. Shirley Wynne, of New York, has expressed this idea very well. In speaking of diphtheria prevention he said:

"The doctors must do the actual work of immunization. There is a changed conception of the function of the practicing physician."

"For years he has been called a private physician. A physician is primarily a public health officer. Every case of diphtheria is a public matter."

Dr. Wynne might well have added that every case of smallpox, typhoid fever, scarlet fever, tuberculosis or any other communicable disease is a public matter. Furthermore, no physician fulfills his obligation to society unless he regards each case of these diseases as a public matter by reporting it promptly to the health authorities and by taking such other precautions as are necessary to prevent spreading. The report of a case of contagion is to health worker what an alarm is to fire fighting organizations.

I believe that making the practicing physician conscious of his duties as a public health officer in his community, pointing out to him health conditions that could be improved, and impending epidemics that could be prevented, are some of the major factors in the cooperation between health departments and practicing physicians where good may be accomplished.

Last summer two cases of typhoid fever were reported in a city of 1700 population in Illinois. This city had no safe water supply, no sewerage system and the setting was perfect for an outbreak of two or three hundred cases of typhoid, with perhaps twenty to thirty deaths. But prompt cooperation between the local physicians, the city officials, the school officials, and the Department of Public Health,

resulted in the immunization of more than 1,100 of its citizens, and the adoption of measures to limit the cases to the two originally reported.

A number of cases of typhoid fever were reported in Springfield early last summer. They were widely separated and for a while baffled the attending physicians and the health officers as to the source of infection. But when all milk and food handlers were required to submit specimens for laboratory examinations, and a number of typhoid carriers were found in this group, the problem was solved. These prompt measures limited the cases in that city to twenty, instead of probably three or four hundred.

Cooperation between the Department of Public Health and the practicing physicians and their dissemination of knowledge concerning preventive medicine, has made possible the lowest morbidity and mortality rate that has ever been recorded in the history of Illinois. Cooperation of these two groups has also reduced the incidence of sickness and resulting deaths throughout the civilized world. If there could be complete cooperation between the department of health, the physicians and the laity in general, with the knowledge we already have, if properly applied, there is no reason why most of the communicable diseases should not become extinct in all modern civilized nations.

The health department is not in the position of an agency seeking cooperation from physicians without having something to offer in return. It can furnish diagnostic laboratory service. It has authority to make rules and regulations which affect the doctor's daily life. It commands access to channels of publicity and education which are largely closed to the practicing physicians. It can influence public opinion with an ease which can never be acquired by the practicing physician. It can exercise an influence over legislative matters that directly concern the medical profession, which physicians are not in a position to duplicate. The newspaper, the radio and the motion picture open channels to the public mind which are charged with propaganda of quackery and proprietary drug interests. Health departments, as official governmental agents, are in a better position to combat the evil influence of

such propaganda than is the organized medical profession.

From time to time during the past four years vicious articles have appeared in the public press not in keeping with the truth and scientific facts—ofttimes reflecting on the medical profession. When called to my attention, as director of Public Health, armed with statistical facts and data, I always replied to the articles and mailed copies of my reply to the local medical society, the parent-teacher groups, and others interested. With a single exception, we secured publication of my reply in the same periodical that broadcast the misinformation. We thus rendered a real service to both the medical profession and the public.

Health officers and physicians cannot sidestep nor evade their responsibility for the sanitary and the health conditions of their communities. The morbidity and the mortality of a community or city more or less reflects the skill, energy and influence of the health officer and physicians living in those communities and cities.

The primary duty of a health department is to the public. The primary duty of a practicing physician is to his patient and his clientele. The health officer therefore looks at matters from the standpoint of the community as a unit, while the doctor tends to visualize things from the standpoint of the individual. The relations between health department and practicing physicians are, therefore, very close to ideal, when through the establishment of mutual confidence the health officer is able to make the doctor realize the importance of individual to community health and govern his professional activities accordingly.

DISCUSSION

Dr. W. R. Marshall, Clinton: I have enjoyed Dr. Hall's paper very much. I am only sorry that the paper was not read before a larger audience of general practitioners. Dr. Hall's recent term at the head of our public health department and his long service in the general practice of medicine, associated with his activities with the inner organization of our State Medical Society, I think, fits him to give us a paper of this kind, and he speaks with an authority that we all should accept. I think that Dr. Hall's statement that every practitioner is a health officer is a very, very true one. In the practice of medicine there is a field for the health department as well as the general practitioner and, as I know the health department since I have been practicing in the State of Illinois there has been a willingness on their part to heartily cooperate with the general

practitioners. I know of no exceptions. I know that, during Dr. Hall's administration, we have had a hearty cooperation with the members in our county and with our medical society; and this has also been the case with his predecessors at the head of the department. We have had some experience in the past year in the matter of cooperation in our county. A year ago, with the help of the health department, we immunized between two thousand and twenty-five hundred school children in our county against diphtheria, and later in the fall gave the Schick test. We are having now a little epidemic of typhoid fever in our county and we have had the hearty cooperation of the present health department in tracing the source of this and preventing any additional outbreak of typhoid. Some eighteen or more cases came from a church supper. The health department had two men on the job immediately and traced the source of the infection and gave a very hearty co-operation to our county society and to the general practitioners in our community. So we have a warm place in our hearts for the health department.

As Dr. Hall says, the health department has something to give to the general practitioner, when they ask for cooperation. With their laboratory work, and their helping with preventive medicine and all of the organization work, it is, I think, more than a 50-50 proposition with the health department and the general practitioner. It is only by cooperation that we get the fullest benefit in health work. You see this illustrated sometimes in cartoons where two mules are tied together and there are two boxes of feed and each one is trying to get to his feed. They are tied so that they can't and they finally get together and both of them go over and help themselves with one box of the feed and then go to the other. If the general practitioner and the health department work in that way, there is nothing but good that can come from it. And in this day and age of women's clubs and parent-teacher organizations and chambers of commerce and lodges, and this, that and the other, with the cults entering into the practice of medicine, it behooves the general practitioner and the health department to cooperate in order to maintain the standard that they should.

I, perhaps, do not know very much about this great bugaboo of State medicine that we hear so much about. I personally do not have any fear of State medicine in our State when things are going as they are. I think in every case, if the head of our health department is not practically selected by our State medical organization, he has the O.K. of the inner activities of the organization before he is appointed to the health department.

I just want to say again that I heartily agree with everything that Dr. Hall has said, and I regret that more general practitioners could not have heard his paper. I thank you.

(Dr. Hall did not close the discussion.)

Lecturer: "I say, my good man, you can't sleep in here!"

Bored Individual: "I could if this guy next to me wouldn't snore so loud!"

MEDICO-LEGAL ASPECTS OF "SPONTANEOUS FRACTURES"*

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In the case of *Newton v. Industrial Accident Commission of California et al.* (Cal.) 267 Pac. 542, plaintiff, a minor of twenty years, was in the employ as a general roustabout of one Brown, a highway contractor, and had been in such employment for some months. On or about October 6, while working on a public highway, he was sent by his employer to a point about one mile distant to get a truck. He went to a point of the highway where he knew the truck would pass, and waited for it. As he was waiting the truck came along, but at about the same instance of time another automobile passed between the truck and the boy, so, being afraid as the boy testified, that the truck driver did not see him, he hallooed to the truck driver, and ran down the highway after the truck. The truck slowed down, and as the boy was running along the dirt portion of the highway, he heard or felt his knee snap. He did not fall, although he felt his knee crumple under him. He recovered without falling, and continued to the truck, and rode on the truck for about one hour. His knee started to ache and to swell, and his employer sent him to Doctor Harris. Hospitalization and treatment thereafter followed. On December 19 of the same year a refracture occurred when the boy stepped into a hole or depression while walking. The testimony showed that the boy did not stumble, trip over anything, or step into any depression while running after the truck. The expert testimony of the attending physician and surgeon, Doctor Harris, during the trial for recovery of an award in favor of the boy for the first and second injury was as follows: "From the man's history and from the fact that there was no bruise, excoriation or contusion at or about the knee-joint, I would be led to believe that the fracture of the patella was caused spontaneously while the boy was running to catch the truck. I do not believe that there was any extraordinary strain or trauma or exaggerated movement, but that the

fracture occurred as the result of the normal motion of the leg in running. The recurrence, in my opinion, was not caused by an extraordinary movement, but simply by a misstep. Operative findings at the second setting showed the fracture to have recurred through the previous fracture lines. I do not believe that there was any period of partial disability following either fracture."

Upon these facts the commission found that the evidence did not establish that the fracture was caused by injury or strain arising out of or occurring in the course of employment. Compensation was denied. A petition for a rehearing having been denied application was made to the District Courts of Appeals for a writ of *certiorari* which also was denied. The case was carried to the Supreme Court.

Was the medical expert correct in his testimony as seen from the standpoint of a bone surgeon? Was it "spontaneous fracture"?

Before the writers will go into the details of the topic they wish to call the reader's attention to the fact that the term "spontaneous fracture" is misleading. This word carries with it the conception of happening unenforcedly, originating in itself, without external cause, while in truth in every "spontaneous fracture" there are two component parts: a demonstrable underlying abnormal condition of the body, or of the bone itself, and some external causative agent which, if considered as a traumatic force, would be insufficient to fracture a bone of normal structure and resistance independently of the first mentioned condition of abnormality which weakens the bone and its structures. It would be better and more intelligible to call such a fracture: A false fracture, a pseudo-fracture, a pathologic fracture in contradistinction to the true traumatic fracture. We shall, therefore, define a "spontaneous fracture" as a pathologic, pseudo, or false fracture which occurs on account of abnormal fragility of the bone tissue by virtue of a pre-existing disease, or diseases, and which causes the bone to give way under force insufficient to cause damage to a normal bone.

The causes of such enhanced fragility are manifold, and they may be divided roughly into six groups: Three local ones: Tumors, foreign bodies and local infections, and three

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general ones: Infections of a general character (such as blood poisoning, pneumonia, typhoid fever), certain systemic disorders and heredity.

For the claim adjuster, not being a physician, this division is not of much value, and we shall, therefore, disregard it and classify the fractures according to the possibility of occurrence in medico-legal cases.

In workmen's compensation cases and similar cases of master and servant pseudo-fractures happen less infrequently than the reader may suppose. Tuberculosis, syphilis and any kind of injury with subsequent infection which exists over a comparatively long period of time are frequent underlying causes. The infections are mostly of the insidious type. Imperceptibly the bone substance proper and the bone-marrow become infected and eaten up by the infection within the bone cavity. There is originally a slight accident, such as a small cut, a stab into the flesh, or some other form of industrial injury. Some months later the person so afflicted with the bone disease shows signs of abnormal fragility of the bones. Chronic osteomyelitis, an inflammation of the bone-marrow is a good example for this type of cases. The clues are few and far between. The course being insidious, there takes place a gradual change of the bone tissue resulting in what is called rarefaction of the bone substance which means that the previously normal bone substance becomes less and less dense until, finally, it may be covered with a thin sheet of bony substance. The length of time which intervened between the original accident and the final outcome of the infection, the slight importance given to the original injury by the patient, or even the doctor who treated him for his injury, and the apparently obvious lack of causal connection may induce the employer to resist claims which are absolutely justified and compensable. On the other hand, damages may be awarded to an employee for consequences of an injury which he had suffered while in some other employment, and under some other, different master who in fact should be held responsible for the damages. The claim adjuster should always investigate the possibility of the above-mentioned diseases such as osteomyelitis, syphilis or tuberculosis as a safeguard against unwarranted claims of employees. There may be other bone areas in-

fectured in the same manner, and of the same or a similar character, but not yet noticeable to the naked eye. X-ray pictures should be taken of the several parts of the claimant's skeleton in order to discover a pathologic fracture. Insurance companies, employer-corporations and others interested in settling claims of such a nature should not avoid these procedures and costs because of the seemingly improbability or impossibility of the existence of such a condition as multiple bone infections.

While infectious diseases of the chronic type are usually the cause of pseudo-fractures, there are other occasions in which the claim adjuster should look out for unfounded claims. Thus local pressure may cause a thinning of the bone substance at a place where such pressure is constantly exerted. It stands to reason that a certain amount of time is necessary to produce a condition of the bone favorable for pathological fractures in such cases. So it may happen that years after foreign bodies such as metallic nails, spikes, screws or clamps have been fastened to a previously broken bone in order to fix directly the fragments and to keep them in place until the bony ends unite (as in case of compound fractures of the limb), the surrounding healthy tissue is acted upon by the constant pressure of such metallic bands or rings causing atrophy of the bone tissue and diminishing the strength of such bone tissue. It is not the old fracture line which finally breaks, but the tissue underlying the mechanical aid of consolidation of such fractured bone ends. The claim adjuster should always investigate as to the possibility of previous operations of the described kind, and in case of doubt should have an expert make a thorough examination along these lines, too.

Less capable of detecting the possibilities of pseudo-fractures is the claim adjuster in cases in which there are tumors which affect the bone. Such tumors seem to form at the seat of previous injuries and of chronic irritations. Tumors may be benign or malignant. To the former belong the so-called cysts which may occur in the bone either singly or in groups. A cyst is a sac or cavity filled with a fluid or semi-fluid. While these cysts occur mostly in the maxillary bone (upper jaw) in connection with teeth, they may be found everywhere in the tissues of the human body. In the bone

they begin in its interior and as they increase in size, they expand until they may be covered only by a fine layer of bone substance. So-called dermoid cysts may be found in the bones of the skull, often rarefying the same to a large extent. To go into the details of the different types of these and other tumors would lead too far and cannot be done in this paper. However, one type of tumors, other than cysts, shall be mentioned in this connection, because of their potential value as a clue to the claim adjuster in his medico-legal investigations: Cancer and similar new growths. Where the cancerous growth has affected directly the bone, the solution of the question whether or not there is a pathologic fracture may be, or may not be, a comparatively simple task. But there are cases in which the cancer has imperceptibly spread and has sent offshoots through the blood stream or through the lymphatics to other organs, particularly to the spine, forming so-called metastases. These secondary implantations may occur in any bone in which they corrode the bone substance, and finally lead to a pathologic fracture. The investigator should, therefore, be on the alert and should inquire about previous operations on the womb, stomach, intestine, rectum or other organs. The reasons for such operations, if any, should be investigated, and if the investigator finds a history pointing to early cancer which was operated on, x-ray pictures should be taken of the spine and of other bones.

However, the claim adjuster should not lose sight of the fact that none of these conditions mentioned exclude categorically a claim for compensation due to industrial accident because a pre-existing disability does not render the employer immune against compensatory awards by the industrial accident commissions. The most that can be hoped in some of such cases is to cut the compensation down to the amount to which the injured employee is justly entitled under the compensation act.

The next class of cases which may be connected with a pseudo-fracture or many of such fractures are such as create the suspicion of malpractice, assaults and batteries and other torts. These fractures may become a matter of concern in civil as well as in criminal cases. We have already mentioned the pressure which

may be exerted by foreign bodies upon healthy bone tissue leading finally to a pathologic fracture. An impacted tooth may act in the same manner, causing first inflammation and subsequently atrophy of the jawbone. An attempt of the dentist to extract such a tooth may result in a fracture of the jawbone, a suit for malpractice against the operator may ensue, even though all the ordinary skill and prudence has been used by the dentist which other dentists in similar communities, under like or similar circumstances are using. Another case is that in which certain hereditary conditions are the underlying factors of a pseudo-fracture. The writers wish to mention in this connection an abnormality called osteogenesis imperfecta. It is found in infants and young children. Multiple fractures of the ribs and of the long bones may occur. Niklas, as cited in McCallum's "A Textbook on Pathology," p. 859, Saunders and Co., 1916, describes a case of a stillborn infant in whom more than sixty fractures were found, most of them produced some time before birth. One imagines how easily a case of infanticide or of malpractice could be made out against any person or the attending obstetrician. One thinks of it—sixty fractures—and a layman would condemn the attendant as a cruel, barbarous and unskilled doctor. X-ray pictures will disclose the reason for these fractures. The diagnosis, if not made at birth, and provided the child survives, will reveal itself later on in early childhood by an unexpected fracture from the most trivial injury. What has been said about the obstetrician may apply very well to attendants in children's hospitals, foundling homes, orphan asylums and other institutions in which infants and young children are taken care of. For the sake of completeness there may be further mentioned a disease, called marble bones, and another one, Gaucher's disease. The diseases require medical experts. The latter disease may run in the same family affecting several children, and there is a possibility that other members have suffered similar fractures.

In hospitals for mental and nervous diseases there may occur cases of pseudo-fractures due to nervous disorders. It stands to reason that such cases may be under care in a private home, too. These fractures may become a cause of action against nurses, orderlies and even pri-

vate persons who have no connection with the medical profession at all. Once in a while a claim is made against such hospitals that the patients, who are usually seriously sick, have been mistreated. Slight movements of the patients while in bed, under close surveillance, may cause such pathologic fractures. Among the causing agents of such nervous diseases, leading to pseudo fractures, must be mentioned the fact that the nervous tracts of the brain and spinal cord are interrupted by pathologic processes which cause loss of sense of muscular balance and of pressure. The innervation or the nerves regulating the nutrition of the bones are also impaired, and in consequence of these and other factors, the bone, or bones, become undernourished, pressure is exerted upon them which pressure is not counteracted by change of position, and finally atrophy results with ensuing possible pseudo-fracture. *Tabes dorsalis*, general paralysis, late syphilitic processes, are most important in this connection. Often the investigator will have a lead from the mere fact that the patient is confined in such a hospital or under a similar private care, that there is a wasting disease, a disuse or non-use of the limb involved, and an under-development of the respective part of the body or other things.

In homes for the aged the attending physicians and nurses, or other persons, may be exposed to unjustified accusations on account of similar conditions. Old persons show an increased fragility of the bones, and this is particularly evident when such old persons have been in bed for a long time, and when the limbs or bones have been subjected to long immobilization. The question whether there is a true traumatic fracture or a false fracture may in such cases become the subject of heated arguments among medical experts, jurymen or others, when they have to decide such a question for themselves.

The writers wish to call the attention of the reader further to a certain disease called osteomalacia. It does not consist, like rickets, in the disturbance of the development of the skeleton, the growing bones not being retarded in their normal course of ossification. The skeleton has already undergone normal development and has acquired normal firmness. The bones become soft and friable afterward.

The female sex is noticeably predisposed to this disease. It is a disease of the adult. Among exciting causes child-bearing is certainly the most important for both: the first signs of osteomalacia and for the fresh exacerbations which usually date from the time of pregnancy. The earthy salts of the bones disappear, beginning to do so in the interior, spreading outwards and causing a corresponding softening of the bones. The general condition of the patient is often unimpaired for a long while except for some pain and impairment of motions. There is an ill-defined, deep-seated pain in the lowest part of the spine, the nape of the neck, the back and the thighs. The disease runs a chronic course, occupying seldom less than two years and oftentimes even five and ten years. There is also an endemic form of this disease. In any case of auto accidents, industrial injuries or other personal injuries of women the investigator should suspect this disease when he thinks that there is a pathologic fracture rather than a true trauma. He should inquire into the past history of child-bearing; that claimant is a woman of middle age may be taken into consideration, and if she has had the above-described pains the suspicion is strengthened so much more. X-ray pictures of the bones will prove of much value in the diagnosis of this disease, and under circumstances the fact that the ailment responded to proper treatment may give a lead.

Finally, there are some other diseases which may be the cause of pathologic fractures, and which must be mentioned: scurvy and certain diseases due to faulty metabolism. They are, however, particularly within the province of the medical man, since even the most careful general investigation may not uncover any trace of the existence of these ailments.

It is quite significant that the decision of the Supreme Court of California, to which we are going to come back now, is, so to say, prefaced by the following words of the chief justice: "On further consideration, we are of the view that, notwithstanding the rather persuasive arguments of the petitioner, the decision of the District Court of Appeals, affirming the action of the respondent commission denying an award should stand. Although we might disagree with the commission as to the weight of the evidence before it, as an appellate tribunal

we may not overturn a finding of fact, if there is some evidence to support it."

The reader who has been following our explanations up to the present time will probably now be interested in an interpretation of the fact of the case of *Newton v. Industrial Accident Commission of California et al.* (Cal.) 267 Pac. 542, which will show why the judges of the Supreme Court might have been inclined to disagree with the commission in its findings.

A knowledge of the anatomical relations of the kneecap and surrounding other structures is necessary to a perfect understanding of the fractures to which the kneecap is liable.

The patella is a flat and triangularly egg-shaped bone of about the size of a silver dollar. Attached to the kneecap upon its upper border is the tendon of a group of powerful muscles of the thigh, the great extensors of the leg. Upon each side of this comparatively small bone are attached two more strong, but not quite so powerful, muscles. Below these insertions of the above-described muscles there is another attachment, a broad band of tissue which is the union of wide, dense sheaths of the muscles of the thigh, and which is called the great fascia. It is inserted on the lower border of the kneecap.

Thus we see that a comparatively very strong pull is exerted upon the kneecap constantly which acts as a fixed point on which a lever moves. If the pull becomes excessive for some reason, the fulcrum is bound to break. This is the reason why we have in fact three types of breaks of bones: the true traumatic fracture caused by some external violence, the pseudo-fracture which the reader is now sufficiently familiar with, and fractures caused by violent muscular contractions. Although fractures of the normal bone from muscular contractions are comparatively very rare as compared with fractures from external violence, nevertheless they happen. We must consider as true fractures thus produced only those cases in which other intrinsic or external causes can be excluded as the essential vulnerating force. In this group of fractures belong those of bony prominences that serve as points of insertion of powerful muscles such as the lower jaw-bones, the shoulderblades, the arm, the thigh and the rear part of the foot.

The fracture of the patella embraces about one-third of these fractures caused by muscular contractions. The fractures occur from violent contraction of the above-mentioned group of extensor muscles of the leg in persons who make any extraordinary effort to retain the erect position when threatened by a fall, or muscular contraction takes place when the knee is flexed, in which case the fracture occurs in consequence of bending and traction at the same time. Three things, however, stand out conspicuously: a, That there is no underlying pathology as in pathologic fracture; b, that there is no sign of external violence such as excoriations, bruises, or contusions, as in the case of a true traumatic fracture due to external force; and c, that these excessive muscular movements which are of a highly complicated kind anyway, and which cause the fracture, occur when the individual's attention has been drawn away from the voluntary action of the muscles, the powerful pull of which causes the bone to become fractured. In other words, under the stress of the moment the individual controls his muscles in a subconscious or instinctive manner, quick, and upon the spur of the moment, while his mind is directed to some other portion of the actual happenings. Therefore, he is not able to give more than a relatively very inaccurate statement of what has happened to him. This accounts for the paucity of the medical history of such cases as ours. However, the history does not show any infection, general or local, nor any hereditary condition, nor any constitutional shortcoming to account for the existence of a pseudo-fracture. The condition precedent to the diagnosis "spontaneous fracture," a definite pathologic underlying cause is absent. So, it may be asked how it may be assumed that there is a false fracture in this young man of twenty years of age.

Neither does the fact that there were no excoriations, bruises, or contusions, standing alone, prove that the fracture must necessarily be a pathologic one. This fact is at best equivocal, but would be of greatest value if really a general or local pathology had been found. It would have been a valuable, additional, affirmative proof of the existence of a pseudo fracture. As things stand, however, the absence of external signs of violence is equally

compatible with internal trauma caused by excessive pull of the powerful extensor muscles of the thigh. Equally unsatisfactory is the conclusion that the first fracture must have been a false fracture because the refracture occurred through the old fracture lines. The fact that the refracture happened to be just through the old fracture lines seems to prove no more than that there has been not yet a sufficient union of the fragments and in view of the history of the case that no more than eight weeks have elapsed between the first fracture and the refracture, it is more probable that the union was not sufficiently firm to warrant the running around of the boy such a short time after his discharge from the hospital.

If we take all the facts together: The absence of signs of external violence, the fact that the boy has not fallen, although he was liable to do so, that a refracture occurred through the old fracture lines and that no pathology could be found to account for the first fracture, we come to the conclusion that this complex of facts is equally, if no more, compatible with the theory of a true traumatic fracture caused by violent muscle pull, and that the theory of pathologic fracture is lacking of one important detail: the local or general pathology causing a pseudo-fracture.

How does it happen then that the Industrial Accident Commission found that the plaintiff was not entitled to an award in his favor, and how did it happen that the appellate courts were bound to uphold this decision? Industrial accident commissions are fact-finding bodies. Therefore, if there is sufficient evidence supporting such findings of the commission, the appellate courts are bound thereby and cannot on review draw their own inferences from the testimony set forth in the record. They cannot, in presence of sufficient evidence to uphold the decision of the commission, conclude from the testimony whether or not the petitioner is entitled to compensation. Their jurisdiction extends only to the ascertainment of the fact that there is, or that there is not, testimony supporting the findings.

Further, the commission may not disregard medical expert testimony of the subject under consideration, if it is one within the knowledge of experts only, and if it is not also one within

the knowledge of laymen. Under such circumstances expert testimony is conclusive, even though contradicted by non-expert witnesses (240 Pac. 58). Then, again, the burden of proof that the accident arose out of the employment and during the employment is upon the petitioner, while the burden of proof that the injury culminated solely by reason of a pre-existing, inherent defect is upon defendant. In order to prove his case, the petitioner must make some showing, some *prima facie* case; he must give some evidence tending to prove that injury arose out of the employment and during the employment. If, as in our case, the petitioner does not prove an outside cause, some external violence connected with the nature of the employment and during the employment such as a fall or a blow, or if he does not prove some extraordinary movement or action such as a violent pull of the muscles, a sufficiently awkward position of the body due to his employment, to account for some extraordinary movement or muscular action, he has not proved his case. The evidence in our case has not come up to the requirements of the commission.

The doctor concluded that there was an inherent defect because of the lack of the above requisites. Whether his conclusion was right or wrong, the commission adopted his view, and having once done so, the commission as well as the appellate courts were bound by it. It is not necessary that petitioner be free from any inherent defects. If the injury arises out of the employment and by reason thereof and during the employment, the employee is entitled to compensation although the inherent defect contributed to the injury. But there have to be some objective signs connecting injury and employment. In absence of such sufficient proof, no award can be made in favor of the employee. From a purely scientific medical standpoint the writers are not prepared to pronounce this case a "spontaneous fracture" as this term is colloquially used in medicine, because of the absence of any showing of some local or general pathology. Summarizing the medical part of the topic we may say:

1. The proper name for "spontaneous fracture" is pathologic fracture, false fracture, pseudo-fracture.

2. False fractures are always due to either general affections, infections, or hereditary dispositions, or they are due to local infections, tumors or foreign bodies.

3. A pathologic fracture requires a definite pathology as underlying cause in order to justify such a diagnosis.

4. The facts of the case of *Newton v. Industrial Accident Commission of California et al.* (Cal.) 267 Pac. 542, are as compatible with a true traumatic fracture caused by violent pull of the muscles of the thigh as with the theory of a pathologic fracture in absence of the showing of some inherent pathology of the bone or the bony system.

5. The absence of excoriations, bruises, or contusions is not proof that the fracture has not occurred on account of violent means.

6. A refracture occurring during the yet incomplete process of healing should not be called a pseudo-fracture, and should be regarded as the interruption of the normal process of rehabilitation of the respective bone.

7. From the fact that a refracture occurs through a previous fracture line, no conclusion can be drawn exclusively that such fracture and refracture are due to "spontaneity."

8. The syndrome of lack of signs of external violence, of absence of a fall, and of visible extraordinary motions, or any other happening of such character, does not conclusively prove that the fracture or refracture is pathologic as such term is used in medicine.

9. The medico-legal aspects of pathologic fractures are not properly recognized by attorneys, claim adjusters, and physicians and surgeons.

10. Pathologic fractures are more common than one may think.

11. Pathologic fractures may lead to suits for personal damages, erroneously supposed to be due to malpractice, or they may become matters of concern in criminal, other civil, and workmen's compensation cases.

12. X-ray pictures are of paramount value in cases of false fractures.

13. In most cases a properly trained medical man is able to recognize a pathologic fracture.

14. Attorneys, claim adjusters and medical men should go into details of life history of claimants where there is a suspicion of a pathologic fracture.

15. Slight exertion, mild injuries, undernourishment, nervous disease, and other conditions should put the investigator on his guard as to the possibilities of a pathologic fracture.

16. Claim adjusters, attorneys, physicians and surgeons should always keep in mind the possibility of a pseudo-fracture whenever the case seems to be an extraordinary one from the standpoint of causes of such fractures.

APPENDIX

Cases collected by Dr. C. E. Early, industrial surgeon, Los Angeles, Calif.

Case 1.—A driver of a laundry wagon, aged fifty, was driving along his route. The wagon struck a depression in the road, causing the driver to bounce about six inches off the seat. He experienced pain in the back and had continuing disability. When examined a few days later, there was a definite deformity of the back. X-rays showed almost complete collapse of one of the

vertebrae. Detailed history of the patient showed the fact that he had lost about thirty pounds in weight over a period of about two months, also that he had a rather persistent cough. His X-ray pictures of the lungs showed an advanced cancer of the lungs. The collapse of the vertebrae was due to destruction of the bone as a result of cancer, and the collapse would have taken place in a short time without the trivial back injury.

Case 2.—Another interesting case was that of a middle aged man who came in stating that while working as a carpenter he had slipped between the joists and injured his hip. He stated that the injury caused but little pain, and that he was able to continue working, but that his hip had gradually become deformed. Examination showed destruction of bone about the hip-joint with considerable deformity. The leg had shortened about two inches. Subsequent examination in this case proved that the man had syphilis with pathologic fracture about the hip. The case was heard before the Industrial Accident Commission, and at the hearing the man demonstrated to the referee that he had always been remarkably agile for a man of his age. He stood upon one leg and put the other one behind his neck. He also did the "splits." All of his joints were remarkably relaxed, a condition occurring at times in certain forms of spinal cord syphilis. Had the bones and joints been normal, the injured man would have been unable to perform the acts which he did in demonstrating his remarkable physical condition. Had his brain been normal he would have probably had more intelligence than to believe that he could perform such acts, unless he had been trained especially throughout a period of years.

Case 3.—A Mexican laborer was employed unloading and piling sacks of cement, each weighing about one hundred pounds. He had carried and stacked nearly one hundred sacks without event and was in the act of placing a sack on the stack which was then about the level of his head when one of his legs gave way, and he fell to the floor. He stated that he had a sensation as though the floor had given way, and he had gone through a hole. Subsequent examination showed a complete fracture through the thigh bone near the hip with the fragments of the bone overriding about four inches. Examination of the blood showed definitely that the injured man had syphilis. The syphilis had involved the brain, spinal cord and certain bones. The fracture was due to syphilis and not to external violence, as the injured man was doing nothing unusual. There was no external violence at the time the bone gave way.

Case 4.—Another somewhat similar case was that of an American, aged fifty-two, who was working for one of the large oil companies. He and a fellow workman were pulling on a large wrench, when the injured man had a sensation of something tearing in one of his knees. He continued working for two days with some discomfort and swelling of the knee. Then, while carrying a piece of timber his knee gave way and he fell. Examination showed the knee markedly enlarged, but relatively free from pain. Movements in every direction were greatly increased, and the knee bowed outward. X-rays showed marked destruction of one of the large

bones of the knee-joint, there being several detached fragments of bone as large as a pigeon's egg. Subsequent examination proved definitely that this man also had syphilis. The marked disintegration of the bone, had the bone been normal, would not have occurred without extreme violence.

All of the above cases are actual occurrences and all are good examples of fractures occurring in bones as the result of diseases with no or very trivial injury.

CARBUNCLE

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Carbuncle occurs rather frequently. Generally speaking it is readily recognized and not regarded as fatal. It does, however, cause death, especially when it is of the malignant type.

Carbuncles are most frequent in the posterior cervical region, back and buttocks. They may occur in other portions of the body—lips and scalp. The infection enters a hair follicle, undermines the integument, filters into the deeper tissues only to find egress through several apertures, back to the free surface. It is characterized by numerous openings through which the resultant pus escapes.

The pathological findings in carbuncle show, first, an invasion of pyogenic microbes (staphylococcus or staphylococcus and streptococcus, as in this case) in the tissues. This infection creates an increased subcutaneous strain or pressure which reaches its peak and completes the picture in approximately ten days. The acute inflammatory process causes an exudation which is hemmed in by unyielding, deep cervical fascia and the dense fibrous tissue under the skin. This compresses and strangles the blood vessels in the region, causing a septic gangrene in the adjacent tissues. The same process extends to contiguous fields resulting in cribriform perforations through which pus and slough exudes exposing an irregularly excavated ulcer with well defined everted edges. The result is: First, septic slough in gangrenous regions; second, layer of pus produced by organisms in both tissues; third, an area of granulations; fourth, inflamed tissues, circumscribing the entire area.

The severity of carbuncle depends, first, upon the general condition of the patient with special reference to diabetes; second, upon the thickness of the skin, either normally or due to

fibrous scars from previous attacks (which was a factor in this case), and, third, the character of the infection and the extent of the borders of the superficial portion of the deep cervical fascia which limits its spread. All of these conditions hasten or retard recovery and contribute very definitely to the course and severity of the disease.

The prognosis depends especially upon the spread when in the region of the neck. The danger increases with the extent and type of the infection. A vital factor is the destruction of the lower vertebral portion of the deep cervical fascia which permits the fulminating process to extend vertically and laterally with respect to the spine. This latter condition was present in this case to an extensive and alarming degree.

There will be no attempt to record a review of the literature. It might, however, be pertinent, to quote an accepted definition. According to Dorland, it is "an inflammation of the subcutaneous tissue, terminating in a slough and in suppuration, and accompanied by marked constitutional symptoms. The swelling is at first covered by a tight reddened skin which later becomes thin and perforated by a number of openings discharging pus. This mass finally sloughs away leaving an ulcerated excavation."

The following report of a case, giving only the salient facts, is justified I think, for these reasons: First, the number and severity of attacks; second, its course and recovery; third, the low incidence of recovery in involvements of such a large extent; fourth, the plan of treatment.

CASE

Mr. H. (White) Aged 60 years, salesman. Came to my office on October 14, 1932, complaining of a sore on the back of his neck. He stated that his trouble was of ten days' duration and that he had had treatment administered at a Class A Hospital up to the time that he came to see me. He also stated that the surgeon at the hospital had diagnosed his trouble as carbuncle and had operated on him twice—October 9 and 12.

Prior to this time I had treated him for two attacks of carbuncle infection. The last time about nine years ago when he had one on the back of his neck in the region of the fourth cervical vertebra, and the other just below the right scapula. The resulting cicatrix from this attack in his neck became an aggravating factor in the care and treatment of this case. My records show that sugar and albumin were absent and that the specific gravity was normal during his last attack.

Physical examination revealed a large, well developed male, 6' 2" in height, weight 190 lbs. with entire back of neck covered with a large surgical dressing. He was decidedly toxic in appearance and said he had considerable pain. His temperature was 101, pulse 98 and respiration 24. On examination the urine was negative as to sugar and albumin with a specific gravity of 1020. Cultures of specimens showed mixed streptococcus and staphylococcus infection. Aside from his carbuncle his chief complaint was inability to get sufficient sleep. His appetite was not good and he looked undernourished. He had lost about fourteen pounds. Examination of abdomen was negative and, except for a rather weak pulse, there was no evidence of heart disease.

On removing the dressing a large carbuncle area was disclosed, the center of which appeared to be to the right of the fourth cervical vertebral region, the same location as the last attack. It had been incised with a large crucial incision. Some of the sloughing mass had been removed. The area of involvement was 8" long. It extended from the occipital protuberance to the seventh cervical vertebra and was 7" along the occipital ridge and 3½" at the level of the seventh cervical vertebra. There was a definite line of demarkation at the occipital border. Within the immediate region of the crucial incision there were numerous openings in the tissue from which extensive slough and pus were escaping.

During this visit local applications of Hydrosal were applied and infra-red lamp was focalized over small areas of the field for periods ranging from 15 to 30 minutes. The entire procedure taking about five hours. These exposures were repeated daily, at which time I incised and removed numerous infected fascial bundles and shreds of fibrous tissue which had resisted the sloughing process in the area involved. The application of Hydrosal was alternated with Hydrosal ointment and aluminum acetate during subsequent treatment.

When the sloughing material was removed the entire inferior margin of the superior portion of the deep cervical fascia exposed a general gangrenous condition of the tissues and, upon removing these tissues, the dorsal lumbar fascia extending down to the fourth dorsal vertebra formed a definite infected pocket. This pocket was packed once with iodoform gauze, after which aluminum acetate was freely used. As the sloughing process continued the open spaces containing pus were filled with aluminum acetate as the antiseptic of choice for dressing.

In infections involving such extensive necrosis of soft tissue (as was present in this particular case) aluminum acetate is a much better antiseptic and far more cleanly than any of which I have knowledge. It has a predilection for necrotic tissue, dissolving it readily and keeping the wound sterile, clean and odorless.

The patient was cared for in the usual medical way.



Fig. 1. Appearance of ulceration Nov. 1, 1932, showing extensive erosion and craters with irregular surfaces on edges and eversion in occipital region and region of the seventh cervical vertebra of flaps composed of external layers of border tissue.



Fig. 2. Taken Nov. 29, 1932 (4 weeks later). Shows marked improvement with edges of ulceration resuming normal appearance and evidence of flaps adhering.

Various tonics of recognized standard makes, containing large quantities of iron, were prescribed and his bowels kept active with mercurial and saline cathartics. Insomnia was the most troublesome factor the first two weeks of treatment. The patient got most of his sleep while in my office lying upon a couch during exposure to an infra-red lamp. These exposures required from five to six hours each day.

In spite of this intensive course of treatment the patient's general condition remained unsatisfactory and he began to show signs of breaking under the strain. His constitutional symptoms and constant complaints of subjective discomfort were very discouraging. The opsonic index and the phagocytic action of the blood were not sufficient, apparently, to localize the infection.

October 26 an intravenous injection of Colmanganese was administered. On his return to my office the following day he reported he had had, for the first time, some sleep at home and remarked that whatever I had given him on the preceding day had made him feel better.

Figure 1 is a reproduction of a picture taken Nov. 1, 1932. It illustrates the wide distention of the tissues with a crater-like formation. There are evidences of a beginning regeneration of the tissues.

The flap engaged and everted by a pair of forceps at the dependent point of the ulceration could be elevated sufficiently to expose a pocket visible down to the fourth dorsal vertebra. There were large areas of necrotic tissue

in different fields of the main ulceration, from which numerous bundles were removed each day. The resultant pockets or cavities were filled with aluminum acetate and dressed. He began showing signs of decided improvement and his constitutional condition became more satisfactory.

November 1 a second injection of Colmanganese was administered. At the end of the third week, because of improvement in the general condition of the patient, the use of the infra-red lamp was discontinued. The treatment from that time on was local, together with intravenous injections, at weekly intervals, of an ampule of Colmanganese, a colloidal preparation. In all six injections were given.

Figures 1 to 4 belong to a series of 12 pictures taken at intervals of one week, beginning Nov. 1, 1932. They show the ulceration at its worst and the various steps of improvement up to and including the last picture taken March 19, 1933 — four weeks after the patient had been discharged as cured.

Numerous types of dressing were used, but the final dressing of choice was paraffin which was used continuously after December 6, 1932, following which date there was no suggestion of infection. The paraffin was melted in a retort and sprayed rather thickly over the entire area. A pad of cotton of satisfactory thickness was then placed over the wound and held in position by a figure of eight gauze bandage. The dressing was



Fig. 3. Jan. 22, 1933. The last picture taken before the patient was discharged. Note improvement and smoothness of the border line; the rapid growth of hair and the normal appearance of the entire field.



Fig. 4. Picture taken March 19, 1933. Four weeks after patient was discharged.

changed daily. This type of dressing proved to be ideal. No skin grafting was necessary. The scar, at this writing, is scarcely noticeable and the head and neck movements are normal.

CONCLUSIONS

1. Carbuncle irrespective of extent of involvement should not become fatal.

2. Pulverized aluminum acetate is the antiseptic of choice. It should be freely used.

3. Colmanganese has a wide range of usefulness; it is non-toxic in therapeutic doses and is a good hematinic.

31 North State Street.

THE DAWN OF A SPECIALTY IN MEDICINE ALLERGY AND PHYSICAL ALLERGY

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I wish to express my sincere appreciation to this association for an invitation to read a paper on my favorite subject in internal medicine, this is, "Allergy."

We are passing into a new era in the practice of medicine in the development of this subject. We are making a wide departure from trodden paths. Possibly as wide a departure as that which followed the advent of the early studies in bacteriology. In text books of the present day on general and special pathology, and in the text books devoted to general medicine and the treatment of disease of special organs, we find classifications of disease which consist essentially of malformations, traumata, acute and chronic inflammations, intoxications, benign and malignant tumors, etc. We now have to add to the above, an additional item, namely, the allergic diseases which affect the individual as a whole, and also which can affect directly or indirectly, each of the special organs. It is a question with me whether or not any active living tissue is immune to the effect of allergy.

Allergy differs from the above mentioned illnesses in that it is caused in general by agents which are more or less inert, or actually beneficial or necessary to normal individuals, such agents for example as food, pollen, hair, or insect scales, or by physical agents as essential to health as light, heat and cold.

There are apparently two phases of allergy.

The one, a local effect which occurs as a result of direct contact between a sensitive tissue and an offending agent; the other an effect which resembles that which occurs as a result of over stimulation of one or several or possibly all the branches of the vagus nervous mechanism. These effects are of course multitudinous, since the vagus nerve influences the activity of every living tissue.

The local lesion of allergy consists characteristically of pale swelling which is oedematous and anemic, and is surrounded frequently by an area of hyperemia. It can appear with great rapidity and disappear with equal rapidity. Following rapid disappearance there is almost always complete restitution of the parts affected. This is of course subject to gross exception. For example, the allergy lesion can be so intense (exemplified by the Arthus phenomenon) as to cause gangrene of the parts affected. Furthermore, if an allergy lesion affects a part perennially without remission, it can cause hyperplasia of the tissue elements. For example, perennial allergy in the nose gives rise to so-called hyperplastic rhinitis and polyps. In the skin, gross hyperplasia of the skin elements which causes it, in many cases, take on leather-like thickening of the skin; in the bronchii, it can give rise to muscle hypertrophy and proliferation of the tissues. With complete subsidence of the disease these hyperplastic lesions usually disappear and leave the tissues with complete or almost complete restitution to normal structure.

The above statements are all subject to gross exception, because of the fact that the damage done by allergy depends in large degree upon the situation of the lesion. A gross swelling of the loose elastic tissues in the axilla for example, does no harm. A similar lesion of allergy however, in the internal ear or inside the skull, can seriously damage the affected structures and neighboring structures. Edema in soft elastic parts is not especially dense. In more resistant structures, however, the swelling may be so dense as to give the impression of cartilage.

The allergy lesion can be very gross indeed: in fact, so gross that in cases where the face is involved, the features may be almost obliterated. It can cause obstruction in the trachea, obstruction of the intestines, and, in the uri-

nary tract, can cause such a disturbance that the resulting symptoms may simulate and exceed those caused by stone.

There is a gross pharmacological difference, between allergy and the lesions it may stimulate. The one can be stopped immediately as a rule, by the adequate and ideal use of adrenalin, and may be little affected by morphine. In the case of organic diseases, the reverse status usually obtains.

The allergy lesion also differs cytologically from other diseases, in fact, it is characterized by the presence of a typical cell, namely the "eosinophil." Eosinophils present an almost constant finding in allergic tissues at certain phases of the reaction. They are likely to occur in great numbers. They are to be found not only in the affected tissues but also in the blood during certain times and may amount to as much as or more than 25 per cent of the white cells. High counts such as these however, are the exception, not the rule. Eosinophils are increased as a rule not only in the blood but also in the secretions, such as the salivary secretion, nasal secretion, and bronchial secretions—and even in the mucous secretions found in the stools in the case of allergic diarrhea. The finding of eosinophils is more important from a diagnostic standpoint.

For example, in the case of acute coryza, the finding of a gross preponderance of eosinophils in the secretions indicates that the coryza is primarily allergic. If a gross preponderance of neutrophils is found, the disease is infectious in origin. If there is a goodly number of both eosinophils and neutrophils, the lesion is probably infection superimposed upon a primarily allergic disease.

Whereas the local lesion briefly described as above is grossly important, it is hardly so wide spread or damaging as the wide spread effect of over activity of one or several or all of the branches of the vagus nerve. This effect may be more rapidly fatal in extreme cases than any illness with which I am acquainted. In extreme instances, it may resemble the rapidly fatal histamine poisoning, as observed experimentally in animals. General vaso and capillary dilation may be so extreme that the afflicted individual bleeds to death very quickly in his own vessels. In this case, none of the classical signs of allergy appear. Instead, the

patient suddenly becomes apparently lifeless. Pulse and respiration stop, and the patient assumes the appearance of a cadaver. I have had the opportunity upon three occasions of restoring a patient from this condition promptly to a state of health by the quick and adequate use of adrenalin. I have also had patients subject to allergy die suddenly without apparent cause, rhyme or reason, after the eating of a hearty meal. I frankly believe that allergy ranks as one of the most common causes of sudden death of apparently healthy individuals. Death is caused as a rule, I believe, by the encountering of an agent which far exceeds the individual's tolerance.

Allergy may stimulate a great many non-allergic diseases, but almost never stimulates them perfectly, and can almost always be differentiated from non-allergic diseases by careful physicians who understand this subject.

For example: Cerebral allergy can stimulate brain hemorrhage, Mennier's disease of organic origin, migraine, epilepsy or even brain tumor. The distinguishing features lie in family and personal history of allergic diseases, the co-existence of other symptoms typical of allergy. The fact that allergic symptoms are inclined to come and go or migrate, and by the fact that they yield promptly (if uncomplicated) to the effect of adrenalin when ideally administered. Frequently recurring cerebral disease, (diagnosed as a rule as vessel spasm); frequently recurring functional disease of the heart, including tachycardia (not paroxysmal), angina pectoris, and various and sundry arrhythmias, are rather frequently caused by allergic disease, (probably vagal), and can be relieved immediately when this is the case, with adrenalin if ideally given.

There are many types of allergy. There are types which are so widely divergent as to cause pathology and pathogenesis, that we are indeed fortunate in having the non-committal term "alergy" under which we can class the different types of allergic diseases which have nothing more in common than is indicated by the literal meaning of the word "allergy," namely "altered reactivity." Some of the different types of allergy may be grouped as follows:

1. *Serum Sickness*: This can afflict almost any normal individual, if the dose of serum administered is large enough. This

occurs typically several days or two weeks or more after administration of a foreign serum. It may be gruesome in symptomology but rarely is a dangerous illness if controlled by frequently repeated adequate doses of adrenalin.

2. *Accelerated Serum Reactions:* These are likely to occur in members of the atopic family who may or may not have had previous doses of the serum. This illness is likewise gruesome, but is almost always controllable by the use of adrenalin.

3. *Serum Allergy:* This occurs in members of the allergy family who have spontaneously become sensitive to serum. This illness gives rise to violent uncontrollable disease which proves quickly fatal. Coca has frequently mentioned the fact that if a person has tolerated one dose of serum he is almost sure to tolerate a second. Patients with atopic serum sensitivity practically never tolerate a first dose, even though the initial dose may be excessively small. Lamson reviewed the histories of about 80 cases of reported serum deaths and in approximately half, a history of hay fever or asthma was mentioned. Deaths have been reported immediately following the intravenous injection of one drop of horse serum; several following the use of one c.c. subcutaneously. I knew of one case in which death immediately followed the injection of 1/100 c.c. of horse serum intracutaneously as a test. Some of these deaths might have been prevented in the present day by the use of a tourniquet above the site of inoculation of the serum, if the serum were injected into an extremity. This method of therapy, given us first by Cooke and several years later, but independently, by Insley, indicates that the arm or leg should be used for the inoculation of serum instead of the generally recommended sites buttock, back or abdomen. In the latter areas the life saving protecting tourniquet cannot be used.

4. *Natural Hereditary Allergy of Atopy:* as it has been termed by Cooke and Coca, represent an illness which is quite different from serum sickness or accelerated reactions and which is apparently the same disease as serum allergy above mentioned. It depends upon a peculiar hereditary constitution through which a person may become sensitive to one or several or many foreign agents. (Cooke and Vanderveer). The illness frequently becomes man-

ifest in infancy, in the form of eczema, gastro-intestinal disease, or in many other ways. In infancy the illness is usually caused by sensitivity to food, and frequently disappears after a few years. The typical manifestations however, often reappear again in late childhood or in youth in the form of excessive sensitivity to some foreign agent, such as pollen, animal dander, fungi, insect scales, food or sera. Sensitiveness at this age is usually extreme in grade—in fact patients who are so affected may be made ill by amounts of a foreign agent which are so small as to cause the agent to rank in toxicity for them far beyond that of any known poison except one such as diphtheria toxin, and tetanus toxin. In this condition the patient can be affected seriously by one-millionth or much less of the offending substance. This type of illness differs from others to be mentioned subsequently by the fact that it can be passively transferred to other individuals by the injection of the patient's serum into the skin of a normal person by the Preuxnitz and Kustner method.

If 1/10 of a c.c. of serum from an egg sensitive case is injected intracutaneously into a normal person, the skin area will react with the formation of a huge hive in case the injected individual eats egg (Walzer). This disease differs grossly from anaphylactic sensitivity as observed in animals in the fact that the patient cannot be desensitized quickly by sub-lethal dose of the offending agent (Bieredka's Method). This method of desensitization has been tried a number of times in the treatment of human allergy and always with disastrous result. The sensitiveness of a patient of this type however, can be reduced slowly and effectively by repeated and frequently increasing, almost infinitesimal amounts of the agent to which the patient reacts. In this way clinical relief can be obtained, and upon this phenomenon is based our present day methods of so-called "desensitization."

5. The drug allergies are grossly like atopy as above described and may be equally and as tragically extreme, but differ in the fact that sensitivity to drugs cannot be transferred passively to the skin of normal individuals by the Preuxnitz and Kustner method, nor does desensitization therapy seem practical in this condition.

There are two or more types of drug allergy, one as exemplified by a case of sensitiveness to chlorine, and a case of sensitiveness as described by the writer in which the area of the reaction is confined directly to the point of contact between a tissue and the offending agent. For example: In a case of chlorine sensitiveness the inhalation of chlorine gas causes coryza, cough and asthma and the application of a dilute solution of chlorine to the skin causes a hive directly confined to the point of application. This condition is not transferable passively. The common type of drug allergy, however, is not like the above and is exemplified by the commonly observed aspirin allergy. In this case, symptoms such as hay fever, asthma, hives, or collapse may follow the digestion of a small amount of aspirin. The symptoms appear ordinarily a few minutes or several hours after the taking of aspirin. There may be a little or no reaction at the point of contact of the mouth tissues with aspirin and skin tests are practically always negative. Apparently ten per cent of hay fever and asthma patients are sensitive to aspirin. (Stern Van Lewen.) I have devised a simple test for aspirin sensitiveness which should always be used before administering aspirin to an allergic patient. It consists of the placing of several tiny granules of aspirin on the tongue of the patient. If he is aspirin sensitive, he usually displays symptoms of allergy within thirty seconds to two minutes. This reaction can be stopped within thirty seconds to one minute by having the patient repeatedly rinse his mouth with a glass of water containing a little dilute acetic acid. The acetic acid prevents the transformation of the insoluble aspirin into the soluble sodium salicylate by the alkaline mouth juices.

In the early days of the study of allergy it was believed that human allergy like animal anaphylaxis could be induced only by protein substances. This of course has been disproven, for humans can become sensitive to such agents as quinine, atropine, morphine and a host of other non-protein substances and even to inorganic substances. Wolf Esner attempted to account for this type of sensitivity by assuming that a non-protein body could combine with normal body proteins so as to produce a new body which could sensitize an individual and thereafter cause a reaction upon adequate con-

tact. This very attractive theory is very difficult to prove in clinical cases, although it can be easily proven in animals by sensitizing to such agents as iodized protein, or protein treated with bromine. In this case the animals may not react to the natural proteins used but may react with symptoms of anaphylaxis if treated with protein altered by bromine or iodine respectively. This possible explanation should be kept in mind by students of allergy. The future may disclose a method of proving or disproving the idea.

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6. *Physical Allergy*: In 1932, I made a wide departure from the study of allergy in the discovery that patients could become sensitive not only to material substances, but to physical agents, such as certain rays of light, specific for the individual or to certain degrees of heat generated by mental or physical effort. The fact is that patients could not only become sensitive to physical agents such as those mentioned, but could become so extremely and violently sensitive that a slight rise in skin heat could cause extreme grades of shock in certain individuals excessively sensitive to heat. Likewise, a sip of cold water could cause a violent reaction and shock in patients sensitive to cold. In patients excessively sensitive to light the exposure of a considerable area of skin to sunlight for a few moments could cause hives and shock within a few minutes, which rendered them completely helpless. In this class of patients, that is those sensitive to physical agents, I have observed every phenomenon of allergy that I have observed in patients sensitive to egg, pollen, dander, and other material substances. The fact that the condition exists cannot be doubted and has been verified abundantly in recent literature. Furthermore I have found that such conditions as hives or asthma caused by emotional disturbances and varying types of mental or physical activity are usually in patients who are heat sensitive and react to the heat generated by effort; for example, many women supposedly sensitive to spermatozoa are actually sensitive to the effect of heat and effort. Likewise heat sensitive men who think they are impotent may become virile if they chill themselves with a cold bath prior to the effect of heat.

The mechanism through which patients react to physical agents is rather mysterious and

is probably varied. However, the fact stands proven and verified that reactions in cases sensitive to physical agents is just as specific and real as reactions caused in other sensitive persons by certain types of pollen or epithelium or by certain foods. Light sensitive cases are not sensitive to all rays of light, but only to certain specific rays toward or beyond the violet end of the spectrum. This varies in different individuals. Likewise patients sensitive to cold may not react at all to a skin temperature of 0° C. or at 20° C., but may react violently with rise to temperatures between 5° C. and 15° C. Likewise, in patients sensitive to heat, the reaction may occur very violently to skin temperature from subnormal toward normal or vice versa in cold sensitive cases from a normal or high temperature down toward subnormal. Slight grades of heat which are generated by walking across the room, or even by rising from a sitting to a standing posture, cause in some patients violent reactions which can be immediately stopped by a little cold applied to a small skin area. Patients of this sort are almost always violently affected by the ingestion of hot drinks or foods, or in cold sensitive cases by cold drinks or cold foods.

Heat sensitive cases may be relieved by cold and quiet. They rarely know that they are sensitive to heat, but instinctively lead a quiet life, and avoid situations in which they are likely to be overheated. They often give an impression of laziness. Cold sensitive persons on the other hand may be relieved quickly either by heat or effort. They rarely know of their sensitivity to cold, but instinctively lead a life of excessive activity, are inclined to exercise and develop their muscles and feel relieved after prolonged hot baths. A number of historical characters whose activities typify excessive energy could have been diagnosed as cold sensitive individuals.

In a paper of this scope I cannot deal with the details of these conditions, nor give the proofs upon which my ideas on the subject are based. For this the reader is referred to previous writings.

There are two types of physical allergy. One in which the reaction is confined to the point of contact between a surface such as the skin or the surface membranes of the nose,

bronchial tubes or alimentary tract. The other type, or so-called reflex like type, shows reaction not only at the point of contact, but in distant structure as well, and frequently in distant structures only. For example: In a heat sensitive case of the latter type the placing of one forearm in a water bath of 42 degrees centigrade, may cause asthma in one patient, nasal stoppage in another, hives in another or even profound shock, prostration, disappearance of pulse and respiration in another and finally even convulsions, headache, temporary blindness, vomiting, or any number of symptoms which I could mention. The symptoms resemble exactly those caused by contact with egg in an egg sensitive case. It is interesting to remark that in extreme cases such as the above mentioned reaction can be almost immediately relieved by rubbing a relatively small area of skin with a piece of ice. Often the cooling of a hand, arm or both arms will relieve. One can well wonder why patients of this type are not in a constant state of reaction. The fact is that in patients of this sort, reaction is prevented by a subconscious avoidance of heat and effort or cold which is beyond their tolerance. A change in the habits or situation of patients of this sort may result disastrously; in fact, is likely to result in invalidism, or in heat cases in what is commonly diagnosed, heat prostration or sun stroke.

The causative agent in the two types of physical allergy mentioned are different. In the contact type, the patient belongs to the allergy family, in the same sense patients with drug or pollen allergy belong to the allergy family. In the reflex like type however, the situation is different. The etiology in this type of illness is varied. It occurs very frequently in the allergy family, but occurs very often in nonallergic families, due to the effect, I believe, of some disease which throws the heat regulating mechanism out of kilter. The heat regulating mechanism is very complex and requires for its normal activity, the coordinated action of a great number of structures. Structures of such vital importance as the sense organs in the skin, respiratory tract and internal organs for the perception of heat and cold; also a thermostat like mechanism in the mid-brain which responds to the sense of

heat or cold or a change in blood temperature, and in their normal response cause heat to be retained or expelled as indicated from the respiratory tract or skin. Normal regulation of heat loss requires, of course, the co-ordinated responses of the vaso-motor center, respiratory center and the entire cardiac vascular system and skin; finally, voluntary actions on the part of the individual which he brings into play when he feels too hot or too cold.

Sensitiveness to heat and cold is not frequently found in children and when found usually follows a febrile disease, usually measles or scarlet fever or chorea. Reflex like reactions become more common with age as one or another element, which plays a part in the regulation of body heat, breaks down and becomes ineffective. Very frequently however, we find individuals sensitive to heat and effort, or cold, in whom the most exhaustive physical examination discloses no cause for the condition except the fact that the illness is antedated by a febrile disease or other illness.

In writing my monograph on allergy, I introduced the term "Physical Allergy" as a non-committal word, under which the above diseases could be grouped. The term "Allergy" is non-committal, meaning nothing more than altered reactivity. The term "Physical Allergy" meaning altered reactivity to the effect of physical agents indicated only what the literal translation of the term indicates. I do not assume that either type of physical allergy is or is not related to allergy, caused by egg, dander, and other material agents.

Physical allergy is very common and complicates many other illnesses, and is commonly found in patients who have allergy due to material agents. It rather frequently follows anesthesia, and over-indulgence in alcohol, in fact, in any condition which debilitates a patient to such a point that he does not respond normally to the effect of heat or cold. The condition is serious in every sense of the word unless correctly treated.

During reaction the patient is predisposed to infection and among cases of this sort, predisposition to coryza, bronchitis, and pneumonia is great. Relief of the condition is frequently associated with increased immunity,

even against such organisms as affect the skin and respiratory tract.

In my experience, physical allergy has not been transferred passively, by either transfusion or by the Preuxnitz and Kustner method. However, there are case reports by Sir Thomas Lewis, Horton and Brown and several others of passive transference of cold sensitiveness.

7. *Contact Eczema.* There are several types of allergic eczema. The commoner type is that caused by reaction in the skin, causing dermatitis in the same sense that reaction in the bronchial apparatus causes asthma. This can be due either to sensitiveness to material substances, such as foods or to physical agents, such as heat or cold. There is however another type of eczema which seems to represent a different type of disease from any of those previously alluded to. This type occurs typically in the case of poison ivy dermatitis, primrose dermatitis, or ragweed oil dermatitis. The reaction is usually confined to the exposed parts, but in severe cases, this can spread to areas usually covered by clothing. It is apparently caused by the oily substances of the plant. It is typified by the fact that it can be induced artificially in normal or non-allergic people by contact with the oil. It can be relieved by weekly injections of the oil in tiny doses. It cannot be passively transferred by the Preuxnitz and Kustner method. Allied with this there is a type of physical allergy which causes a similar type of eczema of the exposed parts caused by physical agents such as light and which can be relieved completely by exposure of large areas of the skin to light of the wave length which produces the illness. All eczemas of this type appear in the form of delayed reaction occurring after a period of 24 hours or more but which persist for a week or ten days after removal of the cause of the trouble. In trying to account for eczemas caused by light we might imagine that the reaction is caused by the breaking down of some of the normal skin oils by light, and that the broken down substances sensitize the patient, and cause eczema when the substance is liberated again in the skin through the action of light. I have nothing to offer in proof of this attractive theory except what might exist in the fact that it can be relieved

by exposure of areas of skin to light other than areas subject to the reaction. This much resembles an immunologic cure. This type of dermatitis is rather common and may be extremely disagreeable. Relief may result in complete restitution of the affected parts if the cause of the illness is removed.

Causes of Reaction: Among the commoner causes of allergy regardless of type, may be mentioned briefly, light, dry pollen, foods, epidermal substances, spores and fungi including skin fungi, many constituents of dust, intestinal parasites, insect scales, insect bites, drugs, many constituents of smoke, bacteria, foreign sera, substances transmitted by blood transfusion. Also apparently substances of endogenous origin, such as a patient's own breast milk, also specific physical agents, such as light, heat, cold and mechanical irritants. In addition to the above, there is a type of physical allergy which is postural, and which will be described at a later date.

Symptoms: Symptoms are so well known that they need not be repeated here in detail. They may be classified briefly as: generalized allergic shock, orbital symptoms, nasal, oral and pharyngeal symptoms, laryngeal symptoms, bronchial symptoms, gastro-intestinal symptoms, cutaneous symptoms, urological symptoms, pelvic symptoms, neurological symptoms, and miscellaneous symptoms such as hives, angio-neurotic edema, hypotension and certain cardiac and cardiovascular symptoms. Finally there are certain miscellaneous symptoms depending upon the site of reaction, which gives rise to symptoms such as headache, prostration, tremor, convulsion, delirium, bewilderment, phobias, coma, paralysis or asthenias and Meniere's syndroms. Many symptoms could be added to the above which have definitely been proven due to the direct or remote effort of allergy, and probably many additional phenomena will appear as proven effects of allergy when studies of the subject progress.

For a more complete review of the causes and symptomatology of allergy and of the means by which they can be proven allergic, the reader is referred to the vast literature which has been written on this subject.

Specific Diagnosis: There are two phases in the diagnosis of allergy, first, proof as to whether or not a given symptom is allergic in

origin and second, which is much more difficult, discovery of the specific cause of the illness. As aids in the diagnosis of the first phase, may be mentioned a positive family and personal history of typically allergic symptoms dating from an early age. Recognition of one or more typical manifestations allergic in the patient such as nasal or bronchial allergy or hives, one or more reactions at the site of skin test. Finally the therapeutic effect of adrenalin; finally the effect of avoidance or of contact with suspected agents.

The discovery of the direct causes of a given reaction, is very much more difficult than proving the condition is primarily allergic in origin. This is especially difficult because the gross majority of patients, except infants, are sensitive to more than one agent, in fact, rather frequently to several or many agents. The situation is furthermore difficult because in the case of multiple sensitiveness one agent may cause reaction in one tissue while other agents may cause reaction of a different type located in other areas (Vaughn). This diagnosis may tax the ingenuity of a physician to an extreme.

The remoteness of the source of the evil can be illustrated by mentioning a patient sensitive to soy bean. He was not only made ill by inhaling soy bean dust in a mill and at home when the wind blew from the direction of the mill but also by the ingestion of milk or butter from cattle fed with soy bean fodder. He was also made ill by contact through artificial foods and oils containing soy bean products. The patient rightfully asked, why leave the mill when soy bean seems to be everywhere.

Cotton seed and linseed products, corn products and even castor bean products and fish glue are difficult of avoidance in highly sensitive patients. They have a distribution which makes complete avoidance difficult. Upon finding a primary offender in a given patient the reader may be surprised at what a good encyclopedia will disclose concerning its distribution and sphere of use.

Skin tests, while not infallible, are very useful in the diagnosis of allergy. They give useful information, especially in pollen cases, epidermal cases, dust and fungus cases, and in patients sensitive to insect scales. They are useful but less dependable than in smoke

cases, food and drug cases, bacterial cases, and in patients sensitive to sera.

Scratch tests used with glycerinated extracts offer the most practical means of testing which we have at the present time. Intracutaneous test should not be used by general practitioners on account of the possibility of terrific reactions. The method of testing can be made harmless however, by experts. An extremity should always be chosen for intracutaneous tests so that in the case of a violent reaction, the life saving tourniquet can be used. Many cases, especially those classified as contact dermatitis, do not respond to scratch or intracutaneous tests, but they give very strongly positive reactions to the so-called patch test, that is, a test made by applying the offending substance directly to the skin with the aid of adhesive. This should remain in situ for one or several days. Eczema under the material (excluding areas under the adhesive) indicates a positive reaction.

Elimination tests which eliminate specific foods with disappearance symptoms, is one of the most positive proofs of cause which we have at our disposal in food cases (Rowe) but should be verified by the finding of recurrence of the illness upon bringing the patient again in contact with the suspected substance.

TREATMENT

The effective treatment of a severe case of allergy requires more skill, knowledge and experience on the part of the physician than for any illness with which I am acquainted in the field of medicine; in fact, upon this depends the effectiveness of the result. I know of no condition in which bungling, or playing with a condition with which a physician is not acquainted, can do so much harm. If a physician has a broad common sense knowledge of medicine and training and experience in this line of work, a result can be obtained on an average which equals or exceeds those which surgeons obtain in surgical cases, or dermatologists obtain in dermatological cases; in fact, the results obtained in a minority of cases seem almost magic. The correct treatment of a patient in allergic shock, for example, appears almost like raising the dead. Furthermore, the correct treatment of a child with allergic eczema, who may be asthmatic, stunted in mind and growth and who may show

allergic deformities in the chest and face, can be restored to normal in a year or two with such perfect success as to make the treatment of cretinism with thyroid extract seem a very imperfect therapeutic measure. I think the specific treatment of complicated allergy cases ought to be left to a specialist in the line just as operative surgery, operative otolaryngology, or orthopedic work ought to be delegated to specialists. I think in this connection it might be well to refer the reader to a portion of the Hippocratic Oath as follows: "With purity and holiness I will pass my life and practice my art. I will not cut persons laboring under the stone; but will leave this to be done by men who are practitioners of this work." This might be applied to the specific treatment of allergy. It would save many sad experiences for the patient which does neither him nor the physician much good; in fact it seems to me to be a professional mistake for a physician in one line of work to jeopardize his reputation by the mismanagement of an allergy case. The effect of this is unfortunately very obvious to the patient, neighbors and to the profession.

Unfortunately patients with allergy vary in their susceptibilities to such a degree that no fixed rule can be laid down which will apply to any gross number of cases. A majority of patients seem an exception to the rule, so that the skill of a physician experienced in the line seems to be needed in the average case.

Whereas, the specific treatment of allergy ought to be delegated to specialists, the common sense diagnosis of allergy and the use of the life saving symptomatic methods of treatment ought to be known to everyone. Allergic emergencies occur frequently in the work of general practitioners, and he should be equipped to recognize and meet the situation quickly and effectively. This may amount often not only to a most spectacular symptomatic relief but is frequently a life saving measure.

The effective and safe treatment of allergy depends upon the cause of reaction and degree of sensitiveness of the patient. We have at our disposal the choice of the following methods. Avoidance or removal of the specific causes of illness, avoidance or removal of contributory causes, specific treatment with the

agents to which the patient is sensitive, non-specific treatment, and finally symptomatic treatment.

Removal of Cause of Illness. The matter of removal of cause is not so simple as one would believe. If a physician has made up his mind that a patient is sensitive in a given substance it would be well for him to examine an encyclopedia thoroughly and find out the uses and what are made of the suspected substance and its apparent distribution. This topic has been referred to previously.

Non-Specific Treatment is possibly indicated in certain patients. The mechanism through which it operates is speculative. I frankly believe a likely guess concerning its *modus operandi* would be an assumption that the benefit derived occurs partly at least as a result of the fever produced by it or of the slightly raising temperature from subnormal toward normal. Fever regardless of cause, is likely to relieve allergy for a time. Likewise the straightening out of an irregular subnormal temperature frequently gives relief.

Specific Treatment. It hardly comes within the scope of this paper to discuss specific treatment with agents proven to be the direct cause of the illness. Suffice it to say that the methods which appear most promising at the present time are the co-seasonal treatment as described by Vaughn and the perennial treatment as described by Stuart and by Black, modified as suggested by the writer with an addition of ephedrine and adrenalin to the treatment extract and its subcutaneous injection distal to a tourniquet. The latter procedure described briefly by the writer makes specific therapy prove safe in the hands of physicians who understand this subject, since the tourniquet, adrenalin and ephedrine holds the treatment solution local for a time and grossly slows down its rate of absorption. For details concerning the above procedures the reader must be referred to previous writings.

Symptomatic Remedies: Adrenalin—The use of symptomatic remedies is important. Adrenalin, if adequately administered, should give relief, in uncomplicated cases. It is a good practice to give about 0.25 c.c. or less subcutaneously at five-minute intervals until tremor appears. This usually means that an adequate administration had been given and that the

relief should follow. After the dose which is most useful for the patient has been discovered, it can be repeated as symptoms tend to recur. It is advisable to give adrenalin in the incipency of an attack rather than wait until the height is reached. Adrenalin can be given repeatedly, if the dosage is correct, for months or years without much apparent ill effect.

If one wishes a more rapid effect from adrenalin in an extreme emergency, it is advisable to give it intravenously or give a given total amount, say 0.5 c.c. or 1 c.c. in five or six places intracutaneously. Both of these methods give a very quick result. The intravenous method is probably the more rapidly effective and the multiple injection probably the more useful except in extreme emergency. If adrenalin causes heart pound or arrhythmia, its rate of dissemination from the site of inoculation can be controlled almost immediately by the application of a rubber tourniquet above the site of inoculation (Insley). The tourniquet can be removed after a minute or so and reapplied if indicated. As adrenalin reaction can be stopped within less than one minute as a rule in this way. The unfortunate feature of intravenous injections is that a dose once injected cannot be controlled, so far as rate of absorption and delivery to the tissues is concerned through the use of a tourniquet.

In patients who seem abnormally sensitive to adrenalin make the injection distal to a tourniquet. Remove the tourniquet after the adrenalin fixes itself in the tissues by vasoconstriction. This slowly absorbs and prevents sudden effects of overadrenalization such as headache, weakness, heart pound and tremor.

Pituitrin. Pituitrin has an effect that is somewhat similar to adrenalin except that relief does not appear so promptly. Relief so obtained lasts longer. It is useful alone or in combination with adrenalin. Some patients are sensitive to pituitrin.

Ephedrine. Ephedrine and allied bodies, given preferably in solution, has an effect similar to that of adrenalin except that the result does not appear so promptly but lasts longer. Very frequently constitutional symptoms are disagreeable and should be avoided if possible through reducing the dose to the smallest which will give a therapeutic result. Many patients are unable to tolerate ephedrine and

many do not get a good therapeutic result from it. A solution of ephedrine 3% (two parts) and adrenalin 1/100 (one part) is a useful solution for hypodermic treatment. If a tourniquet is used for a few minutes the rate of absorption of ephedrine can be slowed down to such an extent as to allow no constitutional effects.

Atropine. Drugs of the atropine series are time-honored remedies in the treatment of asthma. They can be given subcutaneously or by mouth. Sometimes as little as 1/200 or 1/500 grain three times a day is effective.

Iodides. The iodides are useful remedies, especially in older patients. The best dosage varies from a few drops to 25 or even 50 drops three times a day. Optimum dosage varies in different individuals.

Salicylates. Salicylates are very useful in treatment of nasal and bronchial reactions given in doses of approximately 10 grains every three or four hours. One must always inquire about sensitiveness to salicylates before advising their use or make the test described previously.

Anesthetics. The anesthetics, especially alcohol, are inclined to relieve asthma. Alcohol is frequently very useful especially if combined in fair dosage with acetyl salicylate. This combination is a useful substitute for morphine in many cases.

Habit Forming Drugs. Habit-forming drugs are absolutely contra-indicated except in emergencies which justify the chance of causing addiction. This applies especially to morphine. The hardest cases of asthma to cure are those which have become addicted to morphine.

The desirability of hypnotics in chronic allergy except in emergencies is debatable. I have seen some deplorable results from their prolonged use. One can say I think with fairness that allergy specialists who depend upon the frequent use of hypnotics are not serving their avowed specialty allergy.

Treatment of Physical Allergy. I have described the treatment of physical allergy at length in previous communications in the *Archives of Internal Medicine* and in the *Journal of Allergy*.

Treatment consists in contact cases of sensitiveness to light, cold or scratches, of applying the agent to which the patient reacts more or

less generally until tolerance is obtained. Surprising results frequently follow correct treatment and failure or damaging results may follow careless treatment.

The treatment of reflex like cases is more of a problem but a problem which in many cases gives rise to a highly satisfactory result.

The treatment of heat and effort sensitiveness in well marked cases is a problem. The treatment of cold sensitiveness is likely to be a success and often a brilliant success.

Heat and Effort Sensitiveness. Patients who are chronically highly sensitive to heat and effort have to reconcile themselves to a handicap and adjust their habits and occupations to degrees of heat and effort which they can tolerate. They have to avoid situations and climatic conditions in which they are likely to be overheated. They can frequently obtain relief by living in a cool dry climate if they, in addition, avoid degrees of effort beyond their tolerance. A dry climate is often better for them than a cooler humid climate.

The immediate effect of heat and effort reactions can be very effectively relieved by cold and quiet. Frequently immersing the arms and hands in cold water is adequate. This does not always give immediate relief however, in cases of delayed reaction.

If sensitiveness to heat and effort seems to be a symptom secondary to some other illness, the condition can often be relieved in marked degree by treatment of the primary illness. However, in idiopathic cases, sensitiveness to heat and effort seem to persist in spite of health which seems perfect except in this one respect.

Agents which tend to keep body temperature at a high level usually give relief. The patients react most markedly when temperature is lowest so that the avoidance of gross subnormality in temperature is important. Temperature is inclined to be lowest in the early morning hours. Frequently a hot bath or exercise designed to raise temperature at mid-night will prevent early morning attacks. Agents which cause fever, as a rule, relieve the condition temporarily whether the fever is caused by tonsilitis, pneumonia, typhoid fever, erysipelas or even, as in one asthma case, by a lung abscess. Fever can be given artificially through the use of certain vaccines, especially B. Coli, and occasionally the heat-sensi-

tiveness case can be definitely relieved through the use of repeated doses of vaccines which cause slight fever. In one desperate asthma caused by sensitiveness to heat, relief was obtained through the use of intravenous injections of colon bacilli which caused high grade rises in temperature. Asthma was relieved at the peak of the first reaction. This method of treatment is not without danger and is not highly recommended.

Hydrotherapy is very useful in the treatment of heat and effort sensitiveness. In highly sensitive cases it is very difficult to use heat without precipitating a reaction of some sort. Often a one second exposure to a hot lamp will precipitate a reaction which may result in a total loss of consciousness or a convulsion or result in twitching or violent asthma. For this reason heat and cold has to be applied in the beginning of therapy with great care. Frequently cold applied in a heat-sensitive case will cause shivering and the heat generated by shivering may cause reaction. For this reason both heat and cold have to be applied with equal caution. In the beginning of treatment it is frequently advisable to give bromides or adrenalin or both one-half hour before treatment is started. Heat may then be applied for a few seconds or more or possibly a minute or so until the patient begins to react. Reactions should be stopped immediately by applying cool cloths to the chest, arms and legs or if the patient can stand it a rapid rub with ice on the chest, arms and legs. As soon as the reaction has ceased heat can be reapplied. Care must be taken not to chill down the skin too much with ice. If it is done the patient does not tolerate heat so well when reapplied. This alternation of heat and cold can be continued at frequent intervals for a period of one-half hour and can be repeated daily and for a longer period of time as tolerance is gained. A high degree of tolerance for heat can often be induced within a period of two weeks or two months. When tolerance for heat is gained an effort should be made to induce tolerance for physical effort. This can be done through the use of exercise pushed to the point of causing slight reaction and stopped with cold. This can be frequently alternated and may be repeated many times daily in the beginning of treatment. A degree of tolerance can be obtained through this means which

will not only develop emaciated muscles but change a bed-ridden invalid into a reasonably active individual.

Symptomatic remedies such as adrenalin, ephedrine, pituitrin, atropine, salicylates, the iodides may be useful in the treatment of this type of illness just as they are in the treatment of egg or pollen sensitiveness.

Sedatives such as bromides, alcohol and even chloral hydrates can be used to advantage in the early stages of treatment as a symptomatic remedy but should not be continued for prolonged periods of time.

Avoidance of mental depression and depressing environment is important. Depression apparently allows body temperature to fall to an unusually low level in many cases and can make the patient unusually sensitive to the effect of heat and effort.

Cold Sensitiveness. Patients who are sensitive to cold should be warned against exposure to cold which is beyond their tolerance.

Certain ones can often be relieved through seeking a warmer atmosphere. This does not reduce their tendency to react to cold, however.

Treatment with graduated, gradually increasing exposure to cold gives a brilliant result in a large proportion of cases. This can be taken in the form of cold baths or treatment with heat lamps, alternated with ice rubs. A cold bath should not exceed over fifteen or thirty seconds in duration and should be followed, as a rule, by the drying and brushing of the skin with a stiff brush. An ice rub is a very effective method of treatment. If ice is moved rapidly enough over the skin it does not give rise to a disagreeable sensation of cold any more than a cautery gives rise to a sensation of heat if it is moved with sufficient rapidity. The entire body can be rubbed with ice within a period of fifteen or thirty seconds, in such a way that the patient need feel no sensation of discomfort from it. If this treatment is frequently repeated and gradually increased never exceeding the patient's tolerance, a high grade immunity to the effect of cold can usually be obtained.

Symptomatic remedies are useful in the treatment of this type of illness just as they are in the treatment of heat sensitiveness. The use of vaccines in this type of case is, I believe, illogical and unnecessary.

DIAGNOSIS AND MEDICAL MANAGEMENT OF THYROTOXICOSIS*

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The term thyrotoxicosis is employed to designate a clinical syndrome arising from the morbid activity of hyperplastic goiter (Graves' disease) and includes also so-called toxic or hyperfunctioning adenoma of the thyroid gland. It is a far cry from the original Merseberg diagnostic triad (exophthalmos, goiter and tachycardia) to the extreme elaboration and complexity of the present day. To read over the account of the symptomatology of Graves' disease as detailed in our standard text-books on Medicine is something of a task. For instance, in Blumer's *Bedside Diagnosis* twenty-one pages are required to set forth the sensory and motor disturbances and describe the organic secondaries which are more or less characteristic of thyroid dysfunction. The implication of all this extensive detail seems clearly to be that the entire organism—every tissue in the body—shares in the disturbance. That the symptomatology should be rich and varied is not surprising when we consider that no part of the mechanism of the body is exempt from the persistent over-stimulation of an elevated metabolism. Not only the clinical aspects of thyroid disease, but also every other condition having to do with its problems has developed under intensive study until an enormous literature has—and indeed still is—accumulating concerning Graves' disease and allied states. One may say that the medical profession has thereby been made "thyroid conscious" and, consequently, no appeal is necessary to awaken interest in these problems.

To approach the matter of diagnosis in a conventional way would be almost an insult to medical intelligence. In its fully developed form, there is no diagnosis easier to make than Graves' disease. Two items of the diagnostic triad—exophthalmos and goiter—are openly disclosed to even a casual glance, and other significant signs—tachycardia, tremor, hot skin, etc.—are almost as easily apparent to the

hand as are the first two to the eye. While it is true that there are very few diseases that have such a constant symptomatology, there is a discount against every individual single symptom—no one of them, not excepting exophthalmos or the elevated basal metabolic rate, is exclusively characteristic of the thyroid syndrome. It is the grouping of signs and symptoms and the general set-up of the case that determine the diagnosis rather than as was formerly believed the coexistence of certain definite phenomena. A few years ago, in informative discussion was focussed about atypical forms of Graves' disease, the so-called "formes frustes" of the French authors. Today the well-informed clinician is quick to detect most of these cases. The residuum of obscure, masked cases that really present a difficult problem to identify is now mainly divided between the neurologist and cardiologist. To the former is most frequently presented the decision as to the thyroid background for obscure psychic and psychoneurotic deviations and in the hands of the internist lies the task of detecting the thyroid etiology of obscure auricular fibrillation or of congestive heart failure in middle life without other obvious etiology.

One of the most remarkable things about the development of our therapeutic attitude toward thyroid problems is the unanimity with which we now agree that they are surgical in their requirements and that medical cooperation—aside from diagnosis—properly consists of close association with the surgeon to secure timely operative interference. We may not know a great deal more about the true nature of thyroid perversions than was true of former times, but I think we are, in the main, agreed that, while we cannot eradicate what has escaped identification, we are at least able to control by surgery the morbid stimulation that creates such havoc in the body generally and especially in the cardiovascular mechanism. Perfected technic and preoperative treatment with iodine has lowered the factor of risk of thyroidectomy to a level comparable with other major surgical procedures. When I recall the controversial, and often acrimonious, discussions and the wide variance in opinion of other days and note the present settled agreement that prevails regarding surgical treatment, it seems to me that at last we have a clear

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course whereby we can guide our thyroid patients into smooth waters. That surgical removal of the thyroid is symptomatic treatment is no disqualification so long as we have no alternative to recommend that possesses equal merit. Means and Richardson in their very interesting little book on "Diseases of the Thyroid" (Oxford Medical Monographs) describe in a few illustrative tabulations the successive stages of their experience with methods of treatment in the Thyroid Clinic of the Massachusetts General Hospital, covering three successive four-year periods between 1915 and 1927. During the first of these three periods, from 1915 to 1918 inclusive, x-ray treatment was administered to 39.5%, x-ray with partial thyroidectomy to 19.0%, graded operations to 32.0% and one stage thyroidectomy to 8.0%. During the succeeding four-year period, from 1919 to 1922 inclusive, 51.0% received x-ray, 15.5% received x-ray and partial thyroidectomy, 22.0% graded operations, and 8.5% subtotal thyroidectomy. During the third four-year period, from 1922 to 1926 inclusive, x-ray was given to 9.5%, x-ray and partial thyroidectomy to 6.5%, graded operations to 14.0% and subtotal thyroidectomy to 60.5%. I quote these figures because it seems to me that they epitomize and express very well the change which has taken place in our attitude toward surgery as the method of choice.

The matter is no longer controversial. It has become conventional that thyroid surgery, properly safeguarded, is the proper means to employ to relieve the bodily mechanism of the strain that otherwise in its continuance will produce widespread organic wreckage. It is only the very mild and the occasional inoperable case that should be subjected to any prolonged medical treatment that has not for its purpose either preparation for the removal of the gland or the correction of residual disturbances following operation.

The administration of iodine in exophthalmic goiter to bring about remission of the toxemia has reduced post-operative acute thyroidism to a rare occurrence. The main risk nowadays lies in the direction of the heart which ordinarily determines the fate of the patient. The heart problem in thyrotoxicosis is our most important medical interest.

Hyperthyroid symptoms are mainly those di-

rectly or indirectly due to increased metabolism. Of all organs, that which is most likely to suffer from the stimulation of hypermetabolism is the heart. It seems to be the prevailing opinion that exophthalmic goiter causes more profound changes in the cardiovascular apparatus than is found in association with toxic adenoma. Since in both instances, circulatory wear and tear is induced by the same factor, i.e. over-load from elevated metabolism, the difference is not one of kind but rather one of degree brought about by the duration and intensity of the toxemia. Cardiac over-load appears to be proportional to the metabolism, if other things are equal. There is an increase in the minute-volume output of the heart and a greater velocity of blood flow through the lungs and tissues generally. As a necessary concomitant to this, there is vascular relaxation with increase in pulse pressure. This implies a wide open vascular stream-bed in which heart effort meets little resistance so that its dynamic output is mainly expended upon the increased frequency of the pulse rate rather than in overcoming peripheral resistance to the flow of blood. This probably explains why cardiac hypertrophy is seldom marked and congestive heart failure so infrequent, at least until the later decades of life, despite the increase in work demands on the heart. It is a surprising fact that the hyperthyroidism of itself produces no specific lesion in the myocardium (Rake and McEachern—*American Heart Journal*, vol. 8, no. 1, p. 19). Weller, Wanstrom, Gordon and Bugher (*American Heart Journal*, vol. 8, no. 1, p. 8), reporting a morphologic study of the hearts of 35 patients with exophthalmic goiter state that with but few exceptions, they found no gross or microscopic pathologic changes not equally represented in a carefully matched control series. The same thing they found to be true in 55 cases of toxic adenomatous goiter. It is conceivable however, that associated infections and other coincident unfavorable factors, acting on hearts subjected to prolonged functional over-strain, tend to be more damaging in their effects than in normal circumstances. It is generally agreed that duration of thyroid intoxication, rather than its intensity, is the important fact in causing heart impairment. This is illustrated by the higher incidence of

serious heart damage in toxic adenoma and, furthermore, supplies an explanation for the observation that thyroid cardiac disease is seldom, if ever, found to any notable extent in young people, but is preponderantly present in those of later life who have had their cardiac reserve already encroached upon by degenerative vascular changes. In 200 cases of hyperthyroidism observed by Andrus, cardiac decompensation was present in 18.5%. Its incidence increased in the age decades after forty. In 27 fatal cases with severe congestive failure, reported by Kepler and Barnes, coronary sclerosis, hypertension, syphilis or rheumatic carditis were present in 18 or 67%. In the remaining 9 cases, no cause other than thyrotoxicosis could be found.

Experience seems to indicate that congestive heart failure is rarely found in patients who have regular cardiac rhythm unless there is associated valve defect or myocardial degeneration from other cause than thyroidism. We are all familiar with the extreme heart and vascular reactions of exophthalmic goiter. Despite their extremely uncomfortable and often disconcerting intensity, they are apt to do the heart less damage than the milder but much longer continued stimulation of adenomatous goiter and, consequently, we find the rule that cardiac damage is more marked in this type. In adenoma, the toxemia may be mild at the outset and continue so for a number of years so that it escapes proper interpretation, yet all the time the heart is under extra load. Finally the patient appears as a cardiopath with congestive heart failure. These cases of unrecognized thyrotoxicosis masked as heart disease have been interestingly discussed by Levine (*Annals of Internal Medicine*, Vol. 4, p.67, 1930). They may not have either exophthalmos or a visible goiter but complain of symptoms pointing to increasing heart disability and may eventually die of heart failure without the true nature of their trouble being discovered. The importance of small nodules not easily discovered in the thyroid is often overlooked and an x-ray examination of the chest which might have revealed a substernal goiter may not have been made. Because the physical findings in the heart in mitral stenosis closely resemble those present in hyperthyroidism, these two conditions are often confused. When such patients

reach the stage of congestive failure, they may continue to live far longer than one might expect. For their identification, we must employ somewhat different criteria in the examination and interpretation of symptoms than those customary in pure cardiopathies. The symptoms may include such suggestive items as warm flushed skin, unexplained perspiration, inordinate loss of weight despite an excellent appetite, a certain kind of fidgety nervousness and, on the part of the heart, continued rapid and regular rate, which fails to slow properly after digitalization, paroxysmal runs of auricular fibrillation, loud staccato heart sounds, a rather harsh systolic bruit at the base in the pulmonic area, marked chest vibration simulating a thrill. Electrocardiographic anomalies are frequent but not characteristic. Krumbhaar (*Amer. Jour. Med. Sc.* v. 155, p. 175, 1918) recorded the findings in 51 cases of toxic goiter. Changes in the T wave were noted in certain cases showing progressive muscle damage, but the most characteristic things were the arrhythmias, heart block, premature contractions, auricular fibrillation and auricular flutter. Of all causes, thyrotoxicosis is the most frequent for auricular flutter. Probably many of the attacks of palpitation which these patients describe are due to cardiac arrhythmia. He considered changes in the T wave to have a bad prognostic significance. If suspicion is aroused regarding the possible existence of thyroid heart disease, a basal metabolic test should be made. If this is found to be in excess of 20 above normal, after careful checking, the thyroid may be considered at fault. Further confirmation of this belief may be secured by a careful therapeutic test with iodine.

One striking and peculiar feature about the thyroid heart is its tendency to develop auricular fibrillation and this is more apt to be transient and paroxysmal than when due to other causes. In Wilson's series of 108 cases of thyroid with auricular fibrillation, 23% were paroxysmal. It is considerably more common in adenoma than in exophthalmic goiter. Fibrillation may be the first manifestation of thyroid disturbance, even before there is any significant elevation of metabolism. Every patient, especially if nervous and of spare habit, who comes under observation, with a grossly irregular pulse, who has not demonstrable mitral

disease or other recognizable cardiac pathology, should be suspected and a basal metabolism rate made. It is advisable to examine these patients carefully in the sitting position as a small adenoma may escape detection if the patient is examined only while lying. The possibility of a substernal or thoracic goiter should be kept in mind and the x-ray employed if there is any doubt on this point. Even the absence of any significant elevation in metabolism does not necessarily exclude the thyroid factor. Morris warns about this possibility and relates three interesting cases in point. These were patients with long existing adenomas. Hypertension was present. Morris's chronic cardiopathies were restored to efficiency by thyroidectomy.

A rare happening may be a thyroid heart without tachycardia, provided some counteracting factor producing bradycardia coexisted as, for example, complete heart block (auriculo-ventricular disassociation). The electrocardiograph will explain this inconsistency. A few such cases are recorded in the literature.

Considerable difficulty may arise in distinguishing between cardiac neuroses and the fast beating and erratic heart of thyroidism. Neurocirculatory asthenia and hyperthyroidism have been much confused. We have at our command to set at rest this doubt the metabolism test and if that fails to clarify the point, the trial with iodine as suggested by Plummer. It may prove difficult to secure a satisfactory metabolism reading because standard basal conditions are often difficult to secure in the neurotic individual. By checking and rechecking the test on different occasions such patients usually grow sufficiently accustomed to the technic to permit a reliable reading. If this falls eventually to within ten per cent of the standard figure, one may conclude that no important thyroid factor exists. Should a differentiation not be possible by this means, iodine may be cautiously administered in small doses. The thyroid factor yields promptly and significantly, especially in hyperplastic goiter, the pulse declines, and the nervous symptoms are markedly ameliorated. In cardiac neurosis, similar improvement is not observed.

The foregoing constitute a few of the many considerations that might be instanced to emphasize how importantly the heart is concerned in the diagnosis of thyroidism and how inex-

tricably it becomes involved in the prognosis of the case. Continuance of the thyrotoxicosis unchecked progressively detracts from the patient's efficiency and, in the long run, will result in functional insufficiency of the heart from overwork. Not that the outlook even then is particularly bad, for it is well known that the thyroid cardiopath is very tenacious of life. Many years ago before thyroid surgery was born, Trousseau said that the exophthalmic goiter patient never was cured and never died. Nowadays, fortunately, there is a better fate in store for these patients. Not only may their efficiency be improved by medical treatment, but through suitable resection of the gland, the way is opened up for complete recovery. It is now well known that, if the thyroid is primarily at fault, the most satisfactory treatment for the exhausted heart of thyrotoxicosis is to remove the overload by thyroidectomy. The point of fundamental importance is that in this type of heart trouble, we can delete the hypermetabolism and the extra circulatory work it calls for. When this is accomplished, the heart disturbances, for the most part disappear, even when a high grade of heart failure has developed. Formerly, the existence of serious heart embarrassment was regarded as a contra-indication to operation. It is now regarded as increasing the desirability of resection of the gland. Assuming that this conclusion is no longer open to controversy, I propose to devote the remainder of this discussion to a brief consideration of the means to be employed in the preparation of the patient for operation. I shall not dwell upon such general and well recognized measures as rest, sedatives, high caloric diet, etc., all of which play an indispensable role in the management of these cases. The skill of the therapist in this matter depends on how well he has mastered the technic of iodine, digitalis and quinidine.

Iodine for goiter is one of the oldest remedies of which we have any clear record, having been used for that purpose long before the days of Hippocrates. It remained for Plummer, within very recent memory, to rationalize its employment. The accepted principles of iodine therapy, as they stand today, may be summarized as follows: The favorable effect induced by iodine consists of a fall in basal metabolism with corresponding immediate improvement in pulse

rate, nervous excitability, nutritive status, etc. This response is most strikingly apparent in hyperplastic goiter, so much so, indeed, that it constitutes one of the earmarks of exophthalmic goiter and when it does not occur in some measure, one is justified in suspecting that the case is of different type and not a true Graves' disease. The beneficial effects to be derived from iodine may be marked but they are temporary. If the use of the drug is persisted in beyond a certain time, metabolism rises again to its former level or higher, and the patient usually remains refractory to iodine for a varied but considerable period. It will be seen from this that the benefits to be derived are limited while the harm to be done may be serious. Iodine does not correct or abolish the cause of the morbid stimulation of the thyroid so that no lasting benefit accrues from its use. According to Marine, the mechanism for the temporary beneficial effect of the drug is to produce a pressure retention in the alveoli by means of a rapid accumulation of colloid. This functional block proves but temporary, lasting only until the thyroid cells have accommodated themselves to the increased tension, after which excretion is reestablished and metabolism begins again to rise. It may be confidently expected that this iodine remission will attain its maximum in from 8 to 12 days. If the drug be continued, the improvement with gain in weight lasts about 3 weeks. Then there is a gradual recurrence of symptoms which may increase until they are worse than at first. It is found that if the drug is stopped during the period of remission, there will occur within a week or so a return of symptoms which may be temporarily suppressed again by the use of iodine. Bearing in mind this very definite cycle of events, from bad to good and then again to bad, iodine administration in exophthalmic goiter should be reserved to produce remission for surgical removal of the thyroid. According to Thompson & Thompson, the preoperative employment of iodine has reduced the mortality in the leading clinics from 1.4% to 0.25-0.7%.

There is no fixed rule as to dosage unless it be the rule of practical experience; i. e. to give enough to secure the result sought for. Plummer advised large doses; others have found much smaller amounts accomplish the purpose quite as well. It is only fair to state that large doses

do not appear to exert any harm and as the drug is used for a short period only, it is not necessary to cavil about the dose. The operation is best undertaken on from the fourth to the sixth day of remission and the drug should be continued for three weeks longer in gradually diminishing dosage. If a postoperative crisis seems pending, it should be given boldly, either intravenously or by hypodermoclysis in salt solution.

Among the striking effects of the preoperative use of iodine is a greater tolerance to anesthesia and a greatly improved mental state, both before and afterward, so that the patient is less emotional and restless and more easily controlled. More important still is the control that it exerts over the dreaded postoperative thyroid crisis which formerly took so considerable a toll of exophthalmic patients. If thyrotoxic manifestations show no sign of diminishing under iodine and especially if they appear to grow worse, operation should be postponed as patients in this phase may die of postoperative acute thyroidism. If residual symptoms of hyperthyroidism persist following thyroidectomy, the effect of iodine in small doses should always be tried. It rarely fails to give some relief; at times complete.

Unfortunately, we do not have as clear a justification for the employment of iodine before operation on toxic adenomatous goiter. It is well known that iodine may exert a very disturbing effect in adenomatous goiter. General experience supports the observations of Plummer that a considerable per cent of toxic adenomas have been thrown into hyperfunction by the therapeutic use of iodine. Marine concludes that most, if not all, the instances of the alleged production of Graves' disease by the use of iodine that have appeared in the literature have occurred in predisposed individuals and have been due to the abuse of iodine. It is clear that we run some risk of increasing, rather than reducing, the toxic activity of adenomas by the use of iodine. The preoperative program in this type of thyrotoxicosis must, consequently, be somewhat different from exophthalmic goiter. First of all, we must be clear about which form of goiter we have to deal with. This is not always an easy matter. The nodular character of the thyroid will distinguish adenomatous goiter readily enough from the smooth symmetrical enlargement of the gland in Graves' disease. Difficulty arises here at once due to the fact that about one-third of

the patients with exophthalmic goiter have adenomatous masses in their thyroid glands (Boothby). Consequently a careful analysis of all symptoms and an accurate history are necessary to decide the diagnostic problem. One strong point appears to be the presence or absence of exophthalmos. Of 1656 cases of goiter tabulated by Boothby (in Oxford Medicine), exophthalmos was present in 61% of exophthalmic goiter patients, whereas it existed in very minor degree in only 3% of toxic adenomatous patients. About 5% of adenomatous goiters are of mixed type; that is, there is also coexisting hyperplasia. This condition may be suspected if there is exophthalmos, an unusual degree of nervousness and sweating with an unexpectedly high metabolic rate. These individuals will be rendered more secure by means of the preoperative administration of iodine but they are not easy to identify with certainty. Even if there be no hyperplasia present but the case is one of pure adenomatous type, experience has shown that little harm will result from iodine over the short period of time that the drug is to be used, provided the dose is not pushed to extremes and the effect on the metabolism is watched carefully. If the expected response does not appear within a period of ten days, iodine should be discontinued.

The chief medicinal therapeutic problem in adenomatous thyrotoxicosis is the care of the heart. As previously noted, this type of thyroid perversion, because of its insidious development, and long duration, is apt to produce a good deal of cardiac wreckage so that the patient may be frankly a cardiopath when he comes under observation. Direct cardiac medication has little place unless the heart is grossly insufficient. Digitalis does not often slow the rapid regular heart of thyroidism. When signs of congestive failure are present, with or without fibrillation, digitalis must be given and the same rules that govern its employment in circulatory failure from other causes apply in this case, although the benefits to be expected are usually not so great, requiring larger doses with less effect. This is especially true during severely toxic periods. For fibrillation without insufficiency, digitalis is of doubtful value. Some observers believe that digitalization previous to operation increases the operative risk. However this may be, my impression is that there is a

certain security afforded by digitalis therapy before operation and that there is decidedly less likelihood of the occurrence of postoperative fibrillation. Perhaps the same effect may be secured by one or two doses of quinidine daily for several days before operation. If auricular fibrillation is present, either before or after operation, and digitalis fails to shunt it back under sinus control, quinidine therapy is in order. It may be tried with every safeguard, but the continuous stimulation of the toxic thyroid which has brought the fibrillation about is a serious handicap to its action and it may fail in its effects. The drug is distinctly more effective in its ability to control fibrillation after the thyroid has been removed. According to Anderson (*American Heart Jour.* vol. 8. 1. p. 133) approximately 45% of patients with fibrillation spontaneously acquire a normal rhythm within four days after operation and about 15% if allowed to go untreated. The remaining 40% would continue to fibrillate if left alone and not treated with quinidine. In order to obtain the best results with this drug, it should be used from the third to the sixth day after operation and success can be anticipated in from 90 to 96% of cases. If treatment is delayed longer than this, the percentage of failures increases considerably.

If auricular fibrillation is present, every effort possible should be made to bring it under therapeutic control before operation is undertaken as it distinctly enhances the surgical risk. In the series reported by Barker, Bohning and Wilson (*Amer. Heart Jour.* vol. 8. 1. 121, 1932) mortality from operation in the presence of auricular fibrillation was 22%. This high mortality is offset by the fact that their cases of auricular fibrillation that had other forms of therapy without operation died to the extent of 35%. These observers consider the degree of improvement secured to be strongly in favor of surgery because many of the patients who recovered from operation were restored to practically complete health and efficiency whereas none of those who did not have thyroidectomy is known to have satisfactorily recovered.

Other authorities report postoperative return to normal rhythm in from 40 to 65% of cases. It would appear that auricular fibrillation, occurring in association with thyroidism, is caused by a toxic factor which is eliminated by operation, allowing the heart to recover sinus control.

Before closing this decidedly discursive discussion, I want to revert to the good results secured by the routine administration of small doses of iodine in occasional mild cases of thyrotoxicosis. Means refers to these cases and I am sure it is a part of everyone's experience to now and then see a mild but undoubted thyroidism kept nicely under control by a drop or two of Lugol's solution each day or even less frequently
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MEDICAL PRACTICE IN 1950*

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Seemingly it must be a bold man who, in the face of present conditions, would attempt to predict the status of the practice of medicine 17 years hence.

To the casual observer changes have been so striking during the past few years that he would be justified in believing that there might be even more momentous changes during the next two decades. Whatever these transmutations may be, one fact seems to stand out clearly in conversations with various people who are giving these matters real thought. That is, the general practitioner will be the center around whom the practice of medicine will revolve in the future.

We have heard much about the disappearance of the family physician, and it must be admitted that in certain parts of the country this lovable, dependable, useful friend, counselor and physician has largely dropped out of sight. Many of the members of the rising generation know him not, but older persons realize that the unusual relationship which existed between physician and patient is one with which we cannot easily dispense. The patient, not the physician, is the loser. The people knowing this fact are seeking its correction. Consequently, it is apparent that the pendulum which once swung far toward specialism is now gradually coming back, and I doubt not that in 1950 the general practitioner will be well advanced toward that position which his predecessors occupied.

One of the great reasons why there will not be the tremendous changes in medicine predicted by some, is that we cannot easily alter the nature of man. The ill patient desires the attendance of that type of physician who will minister to him in a personal manner. Technique and treatment is, or should be, of the most modern type, but the patient desires to feel, and indeed he must feel, if he is to obtain the best results from medication, that the physician regards him as a distinct and definite entity, as a friend as well as a patient. In other words, the patient wants to give the doctor his complete confidence, but to so do he must know that the doctor is attuned to him.

It should not be understood I am predicting that medicine will stand still. Nothing good remains stationary. Unless we progress we regress. There have been striking changes in medicine since my student days.

I hark back to the time when the automobile was nebulous; when the telephone was a luxury possessed by the elect; when laboratories were sketchy and when some men still believed in "laudable pus." Today, the motor car has tremendously increased the physician's radius of action; the telephone has practically placed the doctor in the room of his patient who may be many miles away. Bacteriology and pathology have revealed to us new and undreamed of worlds. Therapy has been metamorphosized.

Physicians in the larger places have congregated in office buildings, thus permitting greater cooperation among themselves, and giving unusual advantages to the patient. Improvements in diagnostic and therapeutic apparatus and in medicinal agents are almost unbelievable. We have today instruments of precision undreamed of by the practitioner of a half century ago. We also have observed the great change in the economic conduct of medical practice. Physicians are realizing the necessity of applying business principles in a reasonable degree to their daily work.

When we consider these thoughts we observe that medicine has progressed. We believe also that along these lines it will continue to advance, because the keen analytical minds of men will always find new and improved methods of solving the various medical and surgical problems which come to the attention of the physician.

*Address before American Pharmaceutical Manufacturers' Association, Chicago, Ill. June, 1933.

As the result of all these improvements the mind of the medical man can encompass a much wider professional knowledge. In other words, all this progress has made it possible for one man to carry out a greater range of activity in medicine.

I make bold to predict that 100 or 500 years from now, and as long as medicine continues to be practiced, we shall have the general practitioner, and as his knowledge increases through the betterments in diagnostic and therapeutic measures, he will be more capable of carrying on his work and giving to his patients that perfection of service which the patient expects. In other words, the general practitioner will be a much more competent physician than have been the majority of his predecessors.

We also trust that his rewards will be larger. That is a matter very largely in his own hands, because the wise physician will discover his own economic problems, will devise ways to meet them, and will adopt means to make his particular kind of service more eagerly desired.

This does not mean that there are not men in practice today who have carried out this very thought. I have in mind a physician who, 20 years ago, located in a small suburban town, within commuting distance of New York, and 10 or 12 miles from the county seat. He was graduated from a good medical school and had the usual internship, but possessed no qualifications which would make him outstanding in the eyes of his fellows. He early found that if he were to be a success in that community he must attend satisfactorily to the medical necessities and demands of the people, and prevent them from going to the county seat, or to consulting physicians in New York. He set about to attain this end in a most business-like way.

His office soon contained the various instruments of precision which are necessary in arriving at a proper diagnosis. A competent nurse aided him. He took frequent post-graduate courses in Manhattan. He believed that his services were worthy of proper compensation, and he educated his clientele to that fact. The result is that even in these times of depression his practice has been very large, demanding an assistant and several women in his office, and while he lays claims to no superior knowledge, he does insist that he gives his patients definite and effective service. He has applied to his

daily endeavors the very best in the art, science, and economics of medicine and has been markedly successful.

This emphasis on the general practitioner might indicate that in my opinion specialism is on the wane. We will always have specialists, because there are forms of medical practice which should be carried out only by men who have devoted much time and serious attention to that particular type of work. I feel, however, that ultra specialism, which we have noted during the past few years, will eventually give way.

We have been alleged to have reached such a fine point in specialism that a patient who called upon an otologist for treatment of an abscess in the right nostril was told by that gentleman that he must consult another specialist, as his own efforts were confined exclusively to the left nostril.

Be that as it may, as the general practitioner improves his knowledge of at least the more usual ailments of the human body, he will, I believe, take care of many of the conditions which at the present time are being handled by specialists.

Every person should be under the observation of a skillful practitioner. I am a firm believer in periodic health examinations. The span of life has been lengthened materially since physical examinations became a fact and not a fad. Preventive medicine is playing a tremendously important part in the life of the nation, and if our medical schools will lay sufficient emphasis upon the necessity of carrying out preventive measures, some of our people may be able to become rivals of Methuselah.

The advantage which the general practitioner has in connection with his patient is that close observation of the individual gives him a broad perspective. It enables him to be familiar with the person's individuality and functions and general make-up. To use a homely expression, the doctor is thus enabled to "know the patient's constitution." The better we may know that so-called constitution, the more comfortable will the possessor thereof be, and the longer will he remain in this sphere of action.

There will, nevertheless, be a change in the methods of the practice of medicine, particularly among people who are dependent. If we were to listen to the dicta of certain groups,

very largely composed of laymen, we would start in now to socialize medicine. If medical practitioners were of the type of some of their confrères abroad, such a state might eventuate. I cannot conceive, however, that a majority of our medical practitioners will permit themselves to join a *Krankenkasse*, or to accept a panel of patients.

This is not the time nor place to discuss state medicine abroad, but those of you who have followed up the subject, and particularly those who have observed its workings in European countries, realize that it is not for the American physician nor for the American people.

My own feeling is that by 1950 we shall have a system of part *private* and part *public* practice. By public medicine I mean what is ordinarily called "state medicine," a term which is actually a misnomer in that it may be furnished by the municipality or the county instead of the state or nation.

I believe that the portion of the public now being treated gratuitously by physicians, either in their private practices, or in the clinics, or in the hospital wards, will be eventually grouped together and cared for by the state, county, or municipality, and that the physicians who minister to the indigents will be on salary paid from taxation. The private practitioner will thus be automatically relieved of a great and difficult burden.

We will, therefore, have two types of practitioners: the private physician, who will continue to function as heretofore, and the public physician, who may or may not have a small private practice, but whose major duties will be to care for the needy classes on a strictly salaried basis.

There are many men in the profession who possess characteristics which would make them successful only in private practice, and these men would constitute the private practitioners, both general and special. On the other hand, we have men quite as well educated, and as scientifically sound, who for one reason or another would be able to work effectively under salaried conditions. Those men would practice public medicine on salary.

If this plan can be successfully carried out we can be assured that the poor will receive the personal attention they deserve at the hands

of the men who are properly compensated, and that other people who can afford to pay the physician will employ the private practitioner.

Some economists have felt that the problem of private practice in the future would be solved by the private groups, or the diagnostic clinics.

A few years ago this form of practice seemed to offer a means of solution, but many people are believing now that group practice has seen its heyday.

The Journal A.M.A., for May 27, 1933, indicates a slowing up in the rate of growth of groups, and shows that the percentage of physicians entering group practice has not increased during recent years.

It seems to me that as the years go on, while there may be an increase in the number of these groups, it will be due largely to the increase in population.

I know of the dissolution of a number of such organizations, but we cannot say that this ending has not been due to the depression rather than to the inability of the group to serve its clientele satisfactorily. A close observer, and one who is in a position to study group practice, says that many group patients are going back to the individual physician, because they are feeling that although they may only see one or two physicians in the group, all the members participate in the fee, and that, therefore, the fee must be exorbitant,—a fact which probably is not true.

Health insurance has been regarded by some as an important factor in the determination of the type of practice of the future. If we could make certain that every patient would not only take out an insurance policy on his health, but would pay the premiums regularly, so that in time of illness he could be cared for by his family physician, or could be sent to the hospital if necessary, and that the insurance company would meet all the expenses, the doctor's situation would be a happy one. But can we depend upon the patient?

The most difficult selling task American salesmen have ever undertaken has been to make the man in the street life insurance minded, and they still have far to go. The average person believes that illness will not overtake him, although it may his neighbor. I am convinced that it will be a herculean

effort to sell the subject of health insurance to the American public in its entirety.

Radical changes will not come upon us rapidly. Even though there will be developments in the matter of public medicine, there will still be an abundance of opportunity for the private practitioner to continue his work in caring for the health of the majority of the people, that is the private patients. When the community will remove the burden of charity and semi-charity which handicaps the physician, the great waste, now associated with private competitive practice, will largely be eliminated, and people of all classes will receive more thorough and painstaking treatment than is the case today.

Whether we look at medicine in the year 1950, or the year 3000, we cannot escape the fact that the true physician will be as he has been since the year 400 B. C.

He will not be the man who regards the patient as a living machine—a human robot. The developments in psychiatry and mental hygiene will not set aside the fact that we must have an essential, personal, almost priest-like confidence and understanding between patient and physician. There are many cases, to be sure, which require this relationship to a lesser extent, and the mass production idea will apply to them.

The true physician cannot be driven by the lash of a master, or a system of rules. Rather he is one who seeks to aid mankind in times of stress, and possesses the will to serve.

But if he is to have the opportunity to fulfill this ambition he must possess another qualification—or rather he must acquire one other trait—and that is the ability to present his desire to assist in a more favorable fashion. We might go farther and call this ability salesmanship.

The proper type of physician must exemplify the spirit of craftsmanship. We should draw a more distinct line between medical practice as a craft and the type which is practiced as an industry. Physicians who attract the public must be of the first type.

Craft, art, patience are of first importance. Where can you look and not see physicians who are putting aside the hope for great emolument in order to serve those whom they term as "their people"? Those men are rich in

those things which constitute the very best in life. They are heroes who die, unheralded and unsung, but not without the very deep and sincere kind of thanks of those whom they have served. And with such practical physicians as these the medical profession is replete.

The entire world is in the throes of a period of transition. Physicians are learning the comparatively new science of economics, and are applying it to their problems. When they emerge from this period we will find medicine essentially as it was before. Human nature changes but little in the course of the centuries. The objective aspects of medical practice may be somewhat different, but the changes will not be violently radical. In 1950, yes, eons hence, physicians, as now, will stand and serve.

HOW LARGE IS A TEASPOON?

In a recent number of the *American Druggist* there appeared the following:

"Physician directs a teaspoonful. You write it on the label. Pick up some of the teaspoons in your own home. Measure the capacity of each. Note the difference between what one holds as against another. Obviously every teaspoon used for administering medicine should be a standard teaspoon. What are we to do about this?"

Now that the druggists have taken up this question, it seems pertinent that the physicians should do the same. We shall be glad to hear from our readers exactly what they think of this question.

It is interesting to note that an announcement from the Drug Trade Bureau of Public Information says:

"For a few cents the family medicine chest can be supplied with a graduate 'medicine glass,' thus avoiding possible 'over-doses' or 'under-doses' in the administration of medicines."

This warning is one of a series of suggestions relating to the handling and administration of medicines in the home, issued in connection with the observance of First-Aid Week. Some of the suggestions are as follows:

"Never take medicine in the dark.

"Always look at the label and read the directions before taking a dose of medicine.

"Never increase the dose or take it more frequently without consulting your physician.

"Pour from the bottle with label upward. This keeps the label clean and legible.

"Never take medicine originally intended for others; the drugs it contains may be entirely unsuited for your condition and be actually harmful."

DIGITALIS

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Digitalis has for the past three hundred years been the most popular and the most valuable single remedy for the treatment of heart disease. It is without a doubt one of the great drugs in possession of the race. Yet no one knows who discovered digitalis or when it was discovered. As a matter of fact when it was first used as a remedy it was for other than its cardiotonic properties. Its first use in medicine goes back to the Anglo-Saxon period where it was mentioned in the "Leechdoms" of the twelfth century. In those days it was called foxglove, which is derived from the Anglo-Saxon *foxesglew*, i.e., fox music, an allusion to the ancient musical instrument consisting of bells hung on an arched support. It was mentioned in the "Liber Medicinalis" of Apuleius, and in the "Vocabulary of the Names of Plants" of the eleventh century, as *foxes glofa*, while in a later vocabulary it was called *foxesglove*.

The ancient Welsh "Physicians of Myddvai" made frequent use of foxglove. It appears as an external remedy in a treatise of the year 1250. Fuchius described it in his "Plantarium Omnium Nomenclaturae" in 1541, and gave it its present name of digitalis, in allusion to the German *fingerhut* (finger-stall). A year later he gave it its present botanical description. He described its flowers as ranging from white to purple and gave it the name of digitalis *purpurea* which it still retains, and which, as is quite obvious, is not a very accurate designation.

In the sixteenth century it passed into the "Herbals" and was mentioned by Turner, and by Gerarde in 1597, who stated: "It doth cut and consume the thicke toughnesse of grosse and slimie flegme and naughtie humours." In 1640, Parkinson observed its value in "extenuating tough flegme or viscous humours troubling the chest," and remarked further that "there are few physicians use it and it is in a manner wholly neglected." Ten years later, however, it was included in the London Pharmacopoeia, which shows it had found a place in the *materia medica* of the physician of that period. Previous to its first inclusion Lobel mentioned that "the country people of Somerseshire employ a decoction for the cure of fever, but its operation is exceedingly violent."

It was chiefly employed in the treatment of epilepsy and as an external application for scrofula or the King's evil, as well as for wounds and ulcers of the legs. In a manuscript book of medical receipts written in 1644 the following formula is given for "An Oyntment for King's Evil": "Stamp a peck of fox gloves in a stone mortar and add to it a pound of fresh butter and set them on a soft fire for four hours to make the oyntment." Another: "Against ye falling sickness take purple foxgloves, 2 hand-fuls of the leaves with 4 ounces of polipodium of the oak. Boil them in beer or ale and drinke ye decoction. One that had the disease 26 years so that he fell with it 2 or 3 times in every month, was so cured by ye use of this decoction that he had not a fitt for 16 months after."

In the 18th century, the great Boerhaave considered foxglove to be of a "poisonous nature," and Haller observed that "6 or 7 spoonfuls of the decoction produced nausea and vomiting."

Around the year 1775, in the county of Shropshire, England, an old woman was making a wonderful reputation with a remedy which was remarkably effective in curing dropsy. Her fame had spread far and wide, for her decoction was really effective, though its composition was a secret. In the same year a practicing physician in the Midlands, William Withering by name, was impressed by the fact that this old woman "had sometimes made cures of cases of dropsy after the more regular practitioners had failed."

Dr. Withering was determined to investigate and at length succeeded in ascertaining that "The medicine was composed of twenty or more different herbs but it was not very difficult for one conversant in these subjects to perceive that the active herb could be no other than the foxglove." That very year he began his study of this remarkable plant. "I soon found," he wrote, "the foxglove to be a very powerful diuretic, and so in the Botanical Arrangements, published in the following spring (1776), I ventured to assert that the Digitalis *purpurea* merited more attention than modern practice bestowed upon it. . . The more I saw of the great powers of this plant the more it seemed necessary to bring the doses of it to the greatest possible accuracy. . . In the Summer of 1776 I ordered a quantity of the leaves to be dried and as it then became possible to ascertain its doses it was gradually adopted by the medical practitioners in the circle of my acquaintance.

"In February, 1779, my friend, Dr. Stokes, communicated to the Medical Society of Edinburgh the result of my experiments of the foxglove. At length in the year 1783 it appeared in the new edition of the Edinburgh Pharmacopoeia, but from which, I am satisfied, it will again be very soon rejected if it should continue to be exhibited in the unrestrained manner in which it has hitherto been used in Edinburgh and in the enormous doses in which it is now directed in London."

In 1785 Withering published his thesis "An Account of the Foxglove and Some of its Medical Uses, with Practical Remarks on Dropsy, and Other Diseases," which ranks with the classics of medical literature. It gave the clinical histories of 163 of his own cases and many "Communications from Correspondents." Complete directions were given for the gathering, stripping, drying and powdering of the leaves. Regarding dosage he had this to say: "I give to adults one to three grains of the powder twice a day. Sometimes I give the powder alone, sometimes unite it with aromatics and sometimes form it into pills; if a liquid is preferred, I make an infusion. . . Patients were sometimes ordered to persist until the nausea came on and then to stop. But it soon appeared that the diuretic effect would often take place first, and sometimes be checked when the sickness or purging intervened. The direction was therefore enlarged thus: Continue the medicine until the urine flows or sickness or purging takes place."

The "Account of the Foxglove," concluded with nine "Inferences," the last three being so remarkable that they are worthy of reproduction here: "That the digitalis may be used with advantage in every species of dropsy, except the encysted. That it may be made subservient to the cure of diseases unconnected with dropsy. That it has a power over the motion of the heart, to a degree yet unobserved in any other medicine, and that this power may be converted to salutary ends."

When physicians began to become acquainted with the clinical efficacy of digitalis and began to employ it in cardiac disease, chemists attempted to learn something of its chemical composition. Among the first to note an attempt to unravel the chemical mystery of this new drug was Thompson in his "London Dispens-

atory," 1811, who alluded to the fact that Destouches established inorganic compounds of calcium and potassium, while Radig found potassium acetate in the plant. Thompson himself made a personal examination, establishing "a deep green resinous matter, in which its narcotic power resides." Leroyer, of Geneva, afterwards gave the names of digitaline and digitalia to a material made by a circuitous chemical process, in which it is questionable whether the final product had any place in the original drug. Thompson sums it up as "an extractive mixture," adding that "the active principle of digitalis is unknown."

Then followed more chemical investigation, notably by Walz, Kosmann, Momelle and Quevenne, Nativelle and Schmideberg. It was the last named chemist who first studied the active principles in digitalis and found that at least three active glucosides could be obtained, which he called digitoxin, digitalin and digitalein. These glucosides were decomposed by heating with acids and broke up into glucose and a complex molecule.

Strange as it may seem, so remarkable a discovery as digitalis failed to gain a firm hold in the practice of medicine during the early days of its discovery. It was Sir James Mackenzie who in 1905 rediscovered Withering and brought his work before the medical profession and established the correctness of his teachings concerning the administration of digitalis. At that time the study of digitalis began in earnest.

In spite of brilliant chemical research the nature of digitalis still remained a mystery. Attempts to determine the therapeutic value of the drug by chemical methods of assay have proved disappointing. This led to the introduction of pharmacological estimations based on the reactions of animals. The following are the most common methods of standardizing digitalis:

U. S. P. Frog Method: Frogs (20 to 30 Gm. weight) are kept at 20° C and the digitalis to be assayed is injected into the ventral lymph sac, the volume being about 0.015 cc. per Gm., and the alcohol content about 20%. The smallest dose causing systolic standstill of the heart at the end of one hour is the minimum lethal dose. The frogs should be standardized by injections of ouabain which should kill in a

dose of 0.00054 mgm. per gram body weight. If the dose for any lot of frogs differs from this, a corresponding correction should be made in the results of the assay. Digitalis tincture must cause systolic stoppage in a dose between 0.0055 and 0.0065 cc. per gram.

Famulener and Lyon's One Hour Method: The digitalis is injected into several 40 Gm. frogs in varying dose. That amount which paralyzes the heart in one hour leaving it sensitive to stimulation, is the quantity on which standardization is based. Each lot of frogs must be standardized before use by testing them with ouabaine. The result of the test is then compared with this standard, and expressed in units.

Focke's Frog Heart Method: The heart of a normal frog is exposed, the digitalis injected and the time required for the heart to stop in systole is observed. If this is not between 7 and 20 minutes a larger or smaller dose must be given. Four such frogs are weighed after the heart stops, and the averages are taken. The weight divided by the minutes multiplied by the dose in cc. is the standard, and should be about 10 (e.g., weight, 0.30 Gm., dose 0.3 cc.; time, 10 minutes for a 10% infusion).

Reed and Vanderkleed's Guinea Pig Method: Guinea pigs of any size are used, a dose based on that for a 250 Gm. pig and adjusted to the weight being injected subcutaneously in the abdomen. The smallest amount of the preparation which will kill 250 Gm. of guinea pig in 24 hours is the unit. This method as well as the one described above is not very reliable.

Hatcher and Brody Cat Method: A cat is anesthetized and an amount of digitalis less than enough to cause death is injected into a vein. Injection is then discontinued and a standard solution of ouabaine, the value of which is known, is injected until death occurs. The amount, less than 0.1 mgm. per Gm. required, represents the value of digitalis previously given. The amount which would have been required without the ouabaine is calculated by a simple proportion. The test may be modified by giving 0.075 mgm. of ouabaine per kilo, and continuing with the unknown solution until death supervenes, which must take place in 1 to 2 hours after beginning the injection. The quantity which represents the activity corresponding to the additional 0.025 mgm. of ouabaine, is multiplied by four to give the fatal

dose, per kilo, which is termed *cat unit*. The cat method of Hatcher and Brody is considered the best. Being a warm blooded animal the cat's heart more closely resembles that of man. It has been proven that investigators working independently in different parts of the country get results that will vary less than 10% assaying samples from the same lot of digitalis by the cat method.

To insure more accurate observations through the use of a digitalis of a known and constant behavior a plan was adopted by the Adult Clinic of Bellevue Hospital and the Department of Pharmacology of Cornell University Medical College. This consists in obtaining a quantity of digitalis leaf sufficient to last for a period of two to three years. It is first standardized by the cat unit method and a sample is tested on several patients to determine its clinical effectiveness. This lot of digitalis leaf is placed in a suitable container sufficient to hold the entire amount. Withdrawals for manufacturing purposes do not exceed a maximum of 10% of the whole amount of the drug. Immediately on withdrawal of a portion of the lot for manufacturing, an equal amount of biologically and clinically standardized digitalis leaf is added to replace the amount withdrawn. After each addition of a new lot the old and the new are intimately mixed. By following this procedure the essential potency of the powdered digitalis leaf remains practically unchanged. At no time can the variation, if any, be more than 10%.

Digitalis is perhaps the only drug in the materia medica concerning whose dosage there seems to be much mystery. This is more apparent than real, for digitalis can be given for varying degrees of heart damage, which naturally requires different doses. Thus in cases where digitalis is to be given for its tonic effect and where digitalization is not an immediate problem it may be given in the form of a powder or tablets in 1.5 gr. doses, or as the tincture in 16 minim doses, three to four times a day.

In cases where digitalization is required there are three methods available: 1. The slow method in which digitalization is obtained in from four to six days; 2. The rapid method in which digitalization is obtained in from one to two days; 3. The intensive Eggleston body-weight method for use in urgent conditions in which digitalization is required in a few hours.

The slow method is used in cases where the

heart is decompensated, but in which no urgency exists. In these cases four doses of digitalis, every four hours during the day, is given. This is done as follows: In form of the tablet, one and a half grains of digitalis is administered from one to three tablets every four hours. In its tincture form the dose is from 16 to 40 minims every four hours. By this method digitalization is obtained in from four to six days.

The rapid method is used in cases which are more urgent and in which digitalization is required in from one to three days. Here the following regime is used: First day, give four tablets (each one and a half grains) of digitalis every six hours for the first twenty-four. This would be equivalent 64 minims of the tincture at each dose. On the second day the dosage is reduced as follows: Two tablets (three grains) or 32 minims of the tincture are given every four hours only during the daytime. From the third day and thereafter until complete digitalization is secured continue with the dosage of the second-day schedule.

In urgent cases where intensive digitalization is required and in which the heart must be completely under the influence of this drug in from 12 to 24 hours mathematical exactitude is required. The total requirements of digitalis for each patient is calculated by one of the following formulas:

$$\begin{array}{rcl}
 \text{Grams of powdered} & & \text{C. U.} \times 0.15 \times \text{w} \\
 \text{digitalis leaf} & & \hline
 & & 1000 \\
 & & \text{C. U.} \times 0.15 \times \text{w} \\
 \text{Cc. of tincture of digitalis} & & \hline
 & & 100 \\
 & & \text{C. U.} \\
 \text{Cc. of infusion of digitalis} & & \hline
 & & 100 \times \text{w}
 \end{array}$$

C. U. represents the milligrams of digitalis in a cat unit. Thus one and a half grains of the tablet or 16 minims of the tincture will have this equivalence. W represents the weight of the patient in pounds.

After the patient has been fully digitalized by any of the above methods, the equilibrium which has thus been established may be maintained by the administration of digitalis in sufficient amounts to replace that eliminated by excretion. The average rate of disappearance

of the drug from the body is twenty-two minims of the tincture each day. There are of course wide variations from the normal. It is therefore suggested that in order to avoid danger of accumulation, the daily dose should not exceed sixteen minims of the tincture.

Digitalis may be introduced into the body by any one of four different ways: 1. by mouth; 2. by rectum; 3. intravenously and 4. intramuscularly. The greatest quantity of digitalis under ordinary conditions is given orally. However, special occasions may arise which demand another route for administration. These will now be considered.

Rectally. The special circumstances which call for the administration of digitalis per rectum are as follows:

1. In cases of unfavorable position of the cutaneous veins.
2. In severe edema.
3. In cases where there is danger of thrombosis and embolism.
4. In very protracted hepatic congestion.
5. Also for reasons to be enumerated later under conditions for intravenous administration which in addition have one or more of the above complicating factors.

Rectal administration of digitalis was introduced prior to the intravenous administration of this drug. This mode of administration was utilized when the oral method gave rise to vomiting. These first attempts were carried out with either the diluted tincture of digitalis or with the infusion. The results obtained were not very satisfactory. The reason was that these preparations irritated the mucous membrane of the rectum and could not be retained for absorption. When the tincture was diluted to the point where it ceased to irritate, its volume was too large for the purposes in mind. The solution, because of its bulk, was often expelled.

The rectal method of administering digitalis has much in common with the intravenous mode, and results may be obtained in those cases in which the oral method is without results. This is not only so when digitalis produces nausea, but especially in those cases in which it is well borne by mouth, but in which no effect manifests itself. According to Cleotta, it is probable that the favorable results obtained from the rectal administration of digitalis are

due to the fact that the blood from the inferior and middle hemorrhoidal veins leading from the rectum goes directly into the inferior vena cava and thence to the heart.

Digitalis may be given per rectum in several different forms. It is always essential that before any form of digitalis is inserted into the rectum the patient should receive a preliminary cleansing enema. After evacuation, from 8 to 20 cc. of digitan is given by rectal tube and washed through with 25 cc. of tapwater. A rectal tube of small caliber is inserted to a depth of about six inches from the anal orifice. The funnel into which the digitan is poured is held about fifteen inches above the level of the anus. After the tapwater has been allowed to flow in, the tube is clamped, left *in situ* for fifteen minutes, and then slowly withdrawn. The patient is instructed to avoid bowel movement for at least six hours.

Another method of injecting digitan rectally is to use one cubic centimeter of the solution in 10 cc. of water, which is injected into the rectum two or three times daily with a small glycerine syringe.

A digitalis mixture consisting of one gram of powdered leaves of digitalis, 50 cc. of simple syrup, and 150 cc. of water, has been preferred by some. A tablespoonful of this mixture is injected, diluted in a small quantity of warm water, preferably with a small rubber bulb so as to be retained as long as possible. This is repeated three times a day.

The most convenient and probably the most popular method of administering digitalis rectally is the use of suppositories. It has been found that the total dosage required for digitalization per rectum is identical with the amount required when the drug is given by mouth.

Before the suppositories are inserted the patient receives the usual cleansing enema of soapsuds. The first day a rectal suppository of four cat units (six grains) is given morning and night, making a total of eight units or twelve grains. On the second day is given one suppository of four units (six grains) in the morning; this may or may not be followed at night by a suppository of two units (three grains) or by a suppository of four units (six grains), depending upon the individual patient and upon clinical conditions, thus making a possible total dosage for the second day of four, six or eight units (six, nine or twelve grains).

On the third and subsequent days are given one suppository of two units (three grains). The Eggleston intensive method of digitalization may be used per rectum, and the dosage is the same as when given orally.

The intravenous route, under certain conditions, becomes the only one advisable or available. Briefly, these may be stated as follows:

1. Gastric intolerance with vomiting.
2. Failure of digitalis to act when given orally in left ventricular failure.
3. Old standing asystole complicated by cirrhosis, ascitis and enlarged liver, constituting a double block which prevents the action of digitalis administered by any other route.
4. The necessity for immediate treatment as in the acute asystole of pregnancy, of overstrain, in the asystole of acute pericarditis or acute myocarditis.

5. In cases of sudden collapse due to organic lesions or acute secondary weakness of the heart in pneumonia and in other acute infectious diseases.

6. In cases where operations along the gastrointestinal tract or upper respiratory tract makes the oral or rectal administration of digitalis inadvisable.

7. In certain cases of arteriosclerosis the stomach distends on the slightest intoxication. In such cases the intravenous route is of great value.

8. In traumatic shock with tachycardia and low arterial pressure the intravenous route is the one of choice.

9. It is also indicated in the beginning of the treatment of an ordinary right asystole. When the peripheral and visceral barriers have been overcome by pleural puncture, puncture of the ascites, purgation and reduction of fluid by a restricted fluid regime, digitalis treatment may be begun by one or two intravenous injections. This has the advantage of acting quickly and with smaller doses. Once the improvement has begun treatment may be continued by mouth.

The contraindications of intravenous digitalis therapy should constantly be borne in mind. These are:

1. In cases where there is danger of thrombosis and embolism.
2. In the terminal stages of asystole. No good can possibly be derived in this condition.
3. In cases where the nitrogen products are much increased in the blood stream (azotemia).

4. In patients with mitral disease with slowing of the pulse and signs of auriculo-ventricular block.

5. In cases of extreme insufficiency of the liver or of the kidneys. Here the excreting powers of these organs are so impaired that the added burden of digitalis intravenously will not prove very helpful.

In general, a digitalis body designed for intravenous injections must meet the following requirements: it must be soluble in water, or at least in a weakly alcoholic menstruum. The tincture is of course not suitable. In addition injectible digitalis must be of uniform activity. It must exhibit a minimum of undesirable side actions; it must not deteriorate rapidly, and it must not irritate the veins into which it is injected.

Several specialized preparations of injectible digitalis are available. Digitan solution suitable for intravenous work comes in ampules each containing 1 cc. (16 minims) of a sterilized, isotonic, aqueous solution, equivalent to 1.5 grains of potent digitalis leaves. Native's crystallized digitaline in the form of 1:1000 solution is used by French physicians in from 10 to 35 drops, diluted with one or two cc. of distilled, isotonic water. Digitalone is a highly purified aqueous solution of digitalis. One cubic centimeter contains 15 minims. Digitos is another standardized preparation of water soluble active principles of digitalis. Cloetta's soluble digitoxin, or digalen is preferred by some. Another injectible digitalis preparation is digifoline which is a water soluble digitalis preparation containing all the digitalis bodies.

Digitalis exerts certain definite actions on the heart. It has the power of slowing the heart rate, and this is due to a depressant action on and lessening of the conductivity both of the nervous, extracardiac element (the vagus) and of the myocardial, intracardiac element (Bundle of His).

Clinically, digitalis may be used almost as a specific in tachycardias and arrhythmias, e. g. complete arrhythmia and auricular fibrillation. In these cases digitalis finds its greatest worth. It is only of slight use in paroxysmal, nervous or febrile tachycardia.

Digitalis is contraindicated generally in bradycardia and premature contractions. It is absolutely contraindicated where there is a tendency to heart block or in actual heart block.

When digitalis is given to a patient with cardiac insufficiency it has a variable action on the systolic; it may lower, raise or have no effect on it whatsoever. But it always lowers the diastolic pressure. The diuretic action of digitalis is one of its most valuable. It is at once a direct diuretic through heart tonic action and an indirect diuretic through renal vasodilator action.

Diuresis produced by digitalis is relatively slow when compared to other diuretics. It begins on the average, 24 to 36 hours after administering the drug and usually continues for several days.

Digitalis is one of our great drugs because it is the greatest physiopathological specific for heart failure that we have. The general indications for digitalis may be thus summarized:

It is indicated in *aortic insufficiency* of whatever type. In the stage of decompensation, of mitral involvement, of impending or definite heart failure digitalis should be given in its fullest doses. Once the stage of compensation has set in the usefulness of digitalis is diminished. It may be continued for a short time in small doses for its vasodilator effect.

In mitral disturbances such as *mitral insufficiency* digitalis gives very effective relief. In *mitral stenosis* where there is but a slight closing of the mitral valves and with no tendency to heart block digitalis may be given with benefit. In those cases where the stenosis is marked and where there is a tendency to heart block digitalis should not be administered.

In *chronic myocarditis* small doses of digitalis over long periods of time (not more than 20 days at a time, however) with intervening pauses of 5 days is of benefit to the patient.

The signs of overdosage of digitalis are well defined. These are: nausea, later on vomiting; fall of heart rate to or below 60; diarrhea; appearance of frequent premature contractions, definite heart block, marked physical arrhythmia or coupled rhythm; and oliguria.

There has been, for many years, a controversy over the administration of digitalis in pneumonia. Recent experimental evidence has shown that high temperature, such as is found in pneumonia, renders the heart more susceptible to digitalis. For that reason great care must be exercised in using digitalis in large doses for patients with high fever.

7119 Nineteenth Ave.

MYOCARDITIS

JAMES G. CARR, M.D.

CHICAGO

"Myocarditis," which etymologically means an inflammation of the myocardium, is the term commonly used to denote any inflammatory or degenerative alteration of the myocardium. Even as the term, "Nephritis," created confusion in our conceptions of the various diseases of the kidney, which result from infection, toxins or vascular disease, and has been the occasion of almost endless discussion in the attempt to adequately distinguish renal disorder of unlike pathology and clinical course, "Myocarditis" has led to confusion in differential diagnosis and to incorrect conceptions of myocardial disease. "Myocarditis," as commonly employed, connotes no pathological or clinical entity. Rather it is a word without pathological significance, including unrelated morphological changes. The designation "myocarditis" is commonly employed to describe those cases of cardiac disease, the examination of which reveals no physical signs of endocarditis, pericarditis, syphilitic aortitis, or congenital heart disease. One unfortunate consequence of this vagueness of nomenclature is the tendency to ignore the importance of myocardial pathology in various types of disease of infective origin.

The symptoms and signs interpreted as diagnostic of myocarditis are not the result of a single etiological factor. They do not rest upon the basis of characteristic morphological change common to all cases diagnosed as myocarditis. The impropriety of the term appears as soon as we undertake to specify the various etiological factors. "Myocarditis," as the term is employed, includes a group of cases properly so named, characterized actually, by acute interstitial changes in the course of various infections which are often followed by the morphological alterations of chronic productive interstitial inflammation with a varying degree of cellular destruction. Unfortunately, the term "myocarditis," as commonly employed, includes a group of cases, non-inflammatory in character. In many instances, in which myocardial change is chronic and progressive, eventually terminating in interstitial fibrosis with cellular destruction, the pathological alteration is not the result of infection or inflammation. This pathological process ensues upon

gradual impairment of the blood supply; it is due to progressive arteriosclerosis. The morphological changes are not those of inflammation. Probably most of the cases of cardiac disease occurring in individuals past middle life are due to the insidious onset of degenerative changes which accompany the process of growing old. As descriptive of these morbid processes of the myocardium, the term "myofibrosis" will be employed in this discussion.

One other group of cases is commonly designated as "Myocarditis." Various acute infectious diseases, the rheumatic diseases, pneumonia, scarlet fever, especially diphtheria, produce degenerative changes in the cardiac muscle. These, it is true, are usually accompanied by some interstitial change, although the pathology in diphtheria is probably mainly degenerative. Primary degeneration of the myocardium is often the result of non-inflammatory processes. Various intoxications, phosphorus, chloroform, mushroom poisoning, acute yellow atrophy, beriberi, pernicious anemia, and eclampsia may cause an acute myocardial degeneration. Although the acute infective types of degeneration may be classified, for convenience' sake, with acute myocarditis, since acute degenerative and inflammatory processes are so likely to be co-existent in the course of acute infections, it is misleading to confuse degenerative processes resulting from infection with those resulting from toxic substances, not related to infection. All of the simple degenerative types of myocardial disease, infective and non-infective, tend to prompt repair after recovery from the causative infection or intoxication, with the possible exception of diphtheria, which may leave a permanently damaged myocardium. For many years prior to Romberg's paper in 1893, degeneration of the myocardium in the course of infections had been recognized. Romberg pointed out the presence in typhoid, scarlet fever, and diphtheria of acute interstitial myocarditis in association with acute degenerative processes. Even yet, pathologists are not agreed as to the relative importance of the two processes in diphtheria.

Anatomically, acute myocarditis is characterized by diffuse infiltration of the myocardium, by round cell infiltration and proliferation of the fixed connective tissue cells, accompanied by a variable degree of degenerative change. In

rheumatic fever, Aschoff described a characteristic finding, the so-called Aschoff's bodies which appear as, "Nodular infiltrations of miliary and submiliary size. The foci are made up of large cells, the origin of which, from lymphoid or connective tissue, is not determined. The nodules are situated about the vessels and often possess a necrotic center." Aschoff regards these foci, from which according to his opinion, fibrosis later develops, as specific for rheumatic infection, since their occurrence in rheumatic infection has been often confirmed, while they have been missed in infections which are not rheumatic. Kaufmann says, "These nodules coalesce and become partially or wholly fibrous" and in another connection says, "An essential, insidious chronic myocarditis productiva has been described after rheumatic fever, typhus, and puerperal fever, and is recognized especially by clinicians in association with other infectious diseases such as measles and pneumonia, in children. It is altogether probable that a myocarditis beginning acutely may soon develop a protracted course, so that the occasional relationship of a chronic myocarditis to infectious diseases, in the course of which acute myocarditis is frequent, appears likely."

The progressive inflammatory change just described is simulated by a different process developing from a different cause. Chronic degenerative processes with interstitial fibrosis are common. This is the usual type of heart disease, encountered in communities in which acute rheumatic fever is of infrequent occurrence and syphilis is a minor cause of cardiac disease. The insidious development of coronary arteriosclerosis is accompanied by the myocardial change, cellular degeneration with interstitial fibrosis, which characterizes the arteriosclerotic heart. Gradual restriction of the blood supply, cellular degeneration, proliferation of the connective tissue eventually result in myofibrosis. The rapidity and extent of the process are modified by the development of collateral circulation, and probably by the amount of work imposed upon the heart. Cardiac strain may conceivably produce a condition in which there is a relative ischemia of the heart muscle; the blood supply may be normal for usual work, yet inadequate for long-maintained or frequently repeated severe exertion. The hypertension which exists prior to the development of arteriosclerosis, or

with it, provides a factor which increases the tension of the cardiac musculature; creates, upon vessels incapable of adequate response, a greater demand for blood and provides the conditions for myocardial degeneration with ultimate fibrosis. The process of degeneration with subsequent fibrosis is illustrated by the acute morphological alterations which ensue upon thrombosis of a coronary vessel, infarction with degeneration of the tissues involved, necrosis, productive interstitial processes, vascular proliferation originating about the necrosed area, and finally connective tissue replacement of the infarcted area. The myofibrosis of the arteriosclerotic heart has developed much more slowly, without the acute changes, but with similar end-results.

The pathological changes which have been discussed may be summarized thus:

1. Acute, (a) mainly degenerative, infective or toxic; these usually recede with recovery of the patient from the underlying disease, although the degeneration caused by diphtheria (in particular) may produce chronic disease.

- (b) mainly interstitial, occurring in many forms of infection; this may be followed by chronic productive inflammation.

2. Chronic, (a) degenerative, usually the result of chronic or acute restriction of the blood supply; this is accurately described as "myofibrosis."

- (b) inflammatory, subsequent to acute interstitial myocarditis and characterized by chronic interstitial inflammatory processes with destruction of muscle fibers and proliferation of connective tissue; this is chronic myocarditis.

A principal difficulty in determining the etiology or estimating the nature of the pathology is the tendency to simultaneous occurrence of both types of chronic myocardial change in the same individual. With advancing years, both inflammatory and degenerative factors may be effective in the same individual. To these must be added the factor of cardiac strain, which has already been mentioned. Opinion differs as to the possibility of cardiac damage from strain alone; many hold that the normal heart cannot be damaged by muscular strain, and maintain that strain is an effective cause of myocardial pathology, only in hearts already diseased.

The development and course of myofibrosis

have been well described by Siebeck thus: "The course presents all possible gradations from unrecognizable defects to the severe terminal stages with permanent cardiac insufficiency. There are defects with some impairment of the cardiac function, with dilatation or arrhythmia, which persist unchanged for many years, there are exacerbations after fresh injury, and there are forms of the disease, of gradual development or quickly progressive. In general a diminished resistance to fresh attacks accompanies the impairment, and since life so often involves excessive strain, slight infections or toxic injuries, the development proceeds steadily after the first injury, especially when the vessels are involved at the same time." The clinical differentiation between myocarditis and myofibrosis rests almost entirely upon the history, although middle-age or more advanced years, the presence of hypertension or arteriosclerosis, suggest that symptoms of myocardial disease are due to myofibrosis. Clinical signs and symptoms of the two types of chronic disease are otherwise alike.

Cardiac irregularities frequently occur in the course of myocardial disease and are correctly attributed to these conditions. Ectopic beats, various grades of block, and auricular fibrillation are found in the acute as well as the chronic types. Auricular fibrillation and paroxysmal tachycardia are frequently found, especially in the myofibrosis developing with arteriosclerosis of the coronary vessels. While these common symptoms suggest the presence of myocardial pathology, they do not warrant a positive diagnosis of such a condition. Ectopic beats are often found in the absence of any further signs or symptoms of cardiac disease. These may be toxic or nervous in origin. It is important to avoid conclusions which unduly alarm the patient or lead to unwise restriction of his activities. The irregularity may disappear upon the withdrawal of coffee or tobacco, or it may cease as the patient is relieved of some excessive emotional disturbance. Perhaps, the ectopic beats of middle-aged and older persons are an expression of the "unrecognizable defects" mentioned by Siebeck. Even so, their significance is usually no greater than that of the general "slowing up" of physical vigor which "always comes with the years." Without other signs of cardiovascular disease, the presence of ectopic beats should not be regarded as indicating myocardial

disease. Irregularities, vague fleeting pains about the heart, even breathlessness should not be too quickly accepted as evidence of cardiac disease, especially in individuals devoid of other objective signs of cardiac involvement. Attacks of paroxysmal tachycardia or fibrillation, although frequent in the course of myofibrosis or chronic myocarditis of infective origin, may be functional. An auricular fibrillation of some duration is a common event in the course of hyperthyroidism and is often succeeded by restoration of the normal mechanism after thyroidectomy. The significance of an abnormal rhythm is dependent upon the presence or absence of other signs of myocardial damage. Alone these do not warrant the diagnosis of myocardial disease, save in the case of heart-block.

In the course of the monograph of Siebeck, there occurs this sentence, "I recognize a large number of patients in whom through a long time the large heart is the only manifestation of the chronic disease of the myocardium." The view here expressed that the large heart is definitely a manifestation of myocardial disease offers a fair field for discussion. The hypertrophied heart of hypertension often presents, at autopsy, a myocardium grossly normal. Microscopically, scattered areas of myofibrosis may be found; they may be lacking. In either case, they are often insufficient to warrant the diagnosis of disease of the myocardium. It is not yet demonstrated that the dilatation and hypertrophy of the hypertensive heart are always evidence of morphological alteration of the myocardium. The left ventricle undergoes notable enlargement in the course of syphilitic aortitis with aortic regurgitation, yet the question as to the presence of myocarditis in these cases is unsettled. Grossly many such hearts do not show evidence of myocarditis or myofibrosis; by no means are microscopical alterations commonly found, adequate to explain the myocardial failure. In both instances, the myocardium has hypertrophied, without inflammation or degeneration, in response to increased work. Hypertrophy with dilatation proceeds to cardiac failure, in many cases of hypertensive heart disease, and of syphilitic aortitis with aortic regurgitation, without myocardial disease. Cardiac hypertrophy, cardiac dilatation, and cardiac failure, it thus appears, are not invariably

dependent upon morphological change of the myocardium. The assumption that these processes involve myocardial disease is questionable; at least probably incorrect. Rather does it appear that the changes mentioned may and do develop upon a vitalistic rather than a purely morphological basis. Under constant demand for increased work due to hypertension or aortic regurgitation, the muscle hypertrophies, eventually dilatation with failure supervenes, upon the basis of physiological, rather than pathological, alteration of the muscle. When morphological change is present, it is probably vascular in origin, due to progressive arteriosclerosis of the coronary vessels in hypertension or to partial stenosis of the coronary openings produced by extension of the syphilitic process to the coronary vessels at their origin.

There are a few clinical signs of importance in the recognition of myocardial disease which are generally known, but often overlooked. Weakening of the cardiac tones, especially the first, gallop rhythm and pulsus alternans are presumptive signs of myocardial disease. Gallop rhythm occurs in different conditions, which are not equally ominous, yet its presence is usually indicative of severe cardiac damage. Frequently the discovery of gallop rhythm in a hypertensive heart gives warning of impending failure. It may occur with the cardiovascular failure associated with severe infectious diseases. The pulsus alternans is almost confined to the failing heart of hypertension; the recovery phase of the cardiac cycle is incomplete and perhaps prolonged; alternate beats are strong and weak, yet separated from each other by a normal time interval.

Weakening of the first heart sound, especially at the aortic area, is a valuable sign of myocarditis or myofibrosis. When this sign is unaccompanied by cardiac failure of the congestive type, its significance as an indication of morphological change of the myocardium is increased. The electrocardiogram is of equal and like value. Given a patient without circulatory failure, the electrocardiogram will, in most cases, permit a diagnosis of anatomic change of the myocardium if such is well established. Early morphological change may be missed. The gross changes of the electrocardiogram which signify myocardial disease may occur as the result of failure of function, especially where this is pronounced. It is not uncommon to find a

badly deformed electrocardiogram obtained at the height of an attack of decompensation succeeded by records showing notable improvement after rest and digitalis. This does not forbid the conviction that the electrocardiogram is of particular value in confirming the diagnosis of pathological processes in the myocardium. Yet it must not be overlooked that similar electrocardiographic changes may be due to toxic substances; drugs and various intoxications, such as uremia, as well as the pressure of tumors upon the vagus, especially the right vagus, may produce abnormal electrocardiograms indicative of gross myocardial change.

This brief discussion of a few features of myocarditis may be summarized thus:

1. There are significant differences of etiology and pathogenesis amongst the numerous cases diagnosed as "myocarditis." These may be differentiated and more accurately classified as: acute degenerative processes, myocarditis, acute and chronic, and myofibrosis.

2. Functional alterations are of importance in the production of many symptoms which we loosely attribute to "myocarditis." Cardiac failure may occur in hearts which, anatomically, will show only slight morphological changes, inadequate to explain the failure of the myocardium. Cardiac failure presents a vitalistic aspect, an alteration of function, which is not always accompanied by morphological alteration.

3. Attention has been called to signs long known, but often overlooked, partly because our attention is so predominantly directed to murmurs, arrhythmia, and cardiac size.

30 North Michigan Avenue

THINGS NOT TO WORRY ABOUT

"I wonder why folks worry. There are only two reasons for worry. Either you are successful or you are not successful. If you are successful there is nothing to worry about; if you are not successful there are only two things to worry about. Your health is either good or you are sick; if your health is good, there is nothing to worry about; if you are sick there are only two things to worry about. You are either going to get well or you are going to die; if you are going to get well there is nothing to worry about; if you are going to die there are only two things to worry about. You are either going to heaven or you are not going to heaven; if you are going to heaven there is nothing to worry about; and if you are going to the other place you'll be so damned busy shaking hands with your old friends you won't have time to worry—so why worry?"—*Wisconsin Pharmacal News*.

Society Proceedings

WARREN COUNTY

The first of a series of twelve meetings sponsored by the American Academy of Pediatrics in conjunction with the Illinois State Medical Society, was held at the Monmouth Country Club on Friday, July 28, 1933, with the Warren County Medical Society acting as host. The Meeting began at 2:00 P.M. and with an intermission for dinner at 6:00 P.M., continued until late in the evening.

The program was arranged by Dr. Clifford G. Grulee, of Chicago, and consisted of six interesting phases of infant and child care, and was followed by a "Question Box," with Dr. Grulee answering all questions asked by the many guests at the meeting.

Program.

1. "Infant Feeding." H. N. Sanford, Chicago.
2. "Behavior Disturbances." Bert I. Beverly, Chicago.
3. "General Treatment of Children." C. K. Stulik, Chicago.
4. "Care of the New Born." A. H. Parmelee, Oak Park.
5. "Preventive Medicine." Robert H. Graham, Aurora.
6. "Allergy." W. L. Crawford, Rockford.
7. "Question Box." Clifford G. Grulee, Chicago.

A short dinner program was given with the principal address by Dr. C. G. Farnum, First Vice-President, Illinois State Medical Society, of Peoria. Illinois has been divided into twelve districts for these meetings, and this was the first of the series to be given during the late summer and early fall, and the program was truly a Post Graduate course in Pediatrics.

There were approximately 135 in attendance, and these guests came from more than twenty-five different counties of Western Illinois and Eastern Iowa. The Peoria Medical Society was well represented by fifteen members, twelve were present from Burlington, Iowa, and a similar number from Galesburg, six from Keokuk, Iowa, and Davenport, eight from Macomb, and fourteen were present from Rock Island County. Every one of the twelve counties in this district was represented by one or more guests, showing the unusual interest in the meeting.

Each presentation was thoroughly discussed by many of the guests and many questions were asked of the speaker throughout the meeting. Dr. Ralph Graham, President of the Warren County Medical Society, was the presiding officer for the entire meeting.

It was the general opinion of all who attended this interesting meeting that this was one of the best pro-

grams they have ever heard, and much credit is due to Dr. Grulee, and the American Academy of Pediatrics for starting the interesting series of meetings to be held throughout Illinois. The Educational Committee of the Illinois State Medical Society through its Secretary, Miss McArthur, assisted materially through many press reports which appeared in all papers in this section of the State, as well as in Eastern Iowa.

The Warren County Medical Society had a 100% attendance during the day, and wishes to thank the many visitors, some of whom came 150 miles or more to enjoy the meeting, for their cooperation.

Chas. P. Blair, M.D.

Secretary.

Marriages

CLIFFORD L. CARTER to Miss Astrid Nygren, both of Chicago, June 7.

CHARLES WESLEY EISELE, Naperville, Ill., to Miss Blanche Mae Kennell of Rochester, Ind., June 15.

LOUIS JOSEPH HALPERN, Chicago, to Miss Gertrude Jenne Epstein of Danville, Ill., June 10.

THOMAS J. MERAR, Quiney, Ill., to Miss Iva Russakov of Chicago, June 18.

Personals

Dr. Edward S. Judd, Rochester, Minn., was the principal speaker before the recent annual meeting of the Lee County Medical Society, on cholecystitis.

Dr. Loyal Davis was the recipient of an honorary degree of doctor of science from Knox College, Galesburg, Ill., at its annual commencement.

Dr. Fred M. F. Meixner, Peoria, addressed the La Salle County Medical Society at Harding, June 7, on "Clinical Aspects of Childhood Tuberculosis."

Dr. Paul M. Hardinger, Mattoon, spoke on medical and surgical treatment of cataract before the Coles-Cumberland Medical Society, July 6.

Dr. Philip H. Kreuscher, Chicago, conducted a crippled children's clinic at Sterling, July 11, and one at Monmouth, July 12, under the auspices of the Whiteside and Warren county medical societies.

Dr. Ralph A. Goodner, Nashville, has been appointed managing superintendent of the

Anna State Hospital; he occupied the same position in 1913.

Dr. Philip H. Kreuscher has been appointed medical director of the Industrial Commission of Illinois. It was also announced that the organization of a medical department is planned, to facilitate impartial administration of the workmen's compensation act.

Dr. William F. Dickson was honored at a dinner, June 29, and presented with a desk set by the staff of the Woodlawn Hospital, on the occasion of his completion of fifty years in the practice of medicine. Dr. Rollo K. Packard, president of the hospital, presided.

News Notes

—The state supreme court refused a rehearing, June 9, to W. H. H. Miller, former director of the state department of education and registration, according to the *Chicago Tribune*, June 10. Miller had been convicted of operating a diploma mill and had served his sentence and paid his fine, but the appeal was an attempt to clear his record.

—Mr. John J. Hallihan has been appointed director of the state department of registration and education, succeeding Mr. Michael F. Walsh, and Eugene R. Schwartz as superintendent of registration, replacing Mr. Paul B. Johnson. Mr. Stanley Kiflowsky, Chicago, succeeds Mr. J. E. Edwards as chief inspector.

—Dr. Eben J. Carey, professor of anatomy, Marquette University School of Medicine, Milwaukee, lectured in the Italian Pavilion of the Century of Progress, July 9, on "The Italian Fathers of Basic Medical Science." This lecture was one of a series of cultural lectures on Italian achievements in science, fine arts, literature and politics, being presented under the supervision of Prof. Enrico Bompiani of the University of Rome. Dr. Carey is in charge of medical exhibits for the exposition.

—A series of one day lecture courses in pediatrics, to be held in eleven districts of Illinois, under the auspices of the American Academy of Pediatrics and the education committee of the state medical society, was inaugurated in Bloomington, McLean County, July 13. The most recent information on problems concerning the care of children and the prevention of

childhood diseases will be discussed in these courses, the second of which opened July 22, in Warren County.

—On his retirement as president of the Chicago Medical Society, June 21, Dr. Herman L. Kretschmer presented a silver cup to the Chicago Medical Society to perpetuate the memory of Dr. J. Warren Vanderslice, who died, Dec. 24, 1932. The winner of an annual golf tournament will have his name inscribed on the cup and may keep it for one year. Physicians eligible for the competition will be the officers and trustees and past presidents of the Chicago Medical Society and members of the council and officers of the branches of the society. The game is to be played between the annual election and Labor Day and will be arranged by a committee consisting of the president-elect, secretary and three members of the council.

—Dr. Ludvig Hektoen retired as professor of pathology, Division of Biological Sciences, University of Chicago, July 1, becoming professor emeritus. Dr. Hektoen, who is 70 years of age, has been professor and head of the department of pathology at the university since 1901. From 1895 to 1898 he was professor of morbid anatomy at Rush Medical College. Since that time he has been professor of pathology at the college. He occupied a similar position with the College of Physicians and Surgeons of Chicago from 1892 to 1894. Dr. Hektoen has been director of the John McCormick Institute for Infectious Diseases since 1902 and editor of the *Journal of Infectious Diseases* since 1904 and of the *Archives of Pathology* since 1926. He was three times chairman of the division of medical sciences of the National Research Council. Societies of which he has been president include the Chicago Medical Society, 1919-1921; Chicago Pathological Society, 1898-1902; Association of American Pathologists and Bacteriologists, 1901; Society of American Bacteriologists, 1929; Society of Immunologists, 1927; Institute of Medicine of Chicago, 1929. In 1909 he was vice president of the American Association for the Advancement of Science and for several years has been chairman of the Committee on Scientific Research of the American Medical Association.

—An informal program marked the dedication of the new \$3,000,000 Provident Hospital

and training medical center for Negroes, June 1, although it had been open for business since May 15. Mr. A. L. Jackson, president of the board of trustees, presided, and speakers included Mr. Edwin R. Embree of the Julius Rosenwald Fund; Col. Albert A. Sprague; Dr. Henry S. Houghton, director of the University Clinics; Dr. Franklin C. McLean; Mrs. George Cleveland Hall, president of the woman's auxiliary board of the hospital, and Admiral Norman J. Blackwood, medical director. The institution is located in the remodeled building of the old Chicago Lying-In Hospital on Fifty-First Street. Previously it had been operating more than forty years at 16 West Thirty-Sixth Street. The training center is the outgrowth of an agreement entered into between the Provident Hospital and the University of Chicago in 1930, with the objective of improving the standard of medical practice and nursing among the colored race. Preference in appointments is to be given to colored physicians, although individual appointments are to be determined only on personal and professional qualifications regardless of race. About \$1,250,000 was used for the purchase and remodeling of buildings formerly occupied by the Chicago Lying-In Hospital. The gift of \$1,000,000 by the General Education Board of the Rockefeller Foundation will be administered by the University of Chicago for teaching purposes in the hospital, and the remainder of the fund will be used for endowment and equipment. Dr. Blackwood will continue as medical director, a position he has held since April, 1930.

The Madison County Medical Society met at Beverly Farm July 7, 1933. It was addressed by Dr. Archie D. Carr on the subject of "Organic Diseases of the Brain." After discussion of Dr. Carr's paper, the business of the society was taken up.

The question of emergency relief was presented by the Society that a definite plan be formulated by Dr. G. B. Smith and it was the sense and submitted to the Society at a later date for adoption. It is hoped by this process to eventually correlate all relief agencies within Madison County.

Delightful refreshments were served by Dr. and Mrs. Smith.

Deaths

JOHN BENNETT, Ava, Ill.; Missouri Medical College, St. Louis, 1898; aged 63; died, June 19, of heart disease and diabetes mellitus.

JOSEPH HOWARD CAMPBELL, Bismarck, Ill.; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1902; served during the World War; aged 60; died, May 30, of coronary sclerosis.

HERMANN P. A. CARSTENS, Forest Park, Ill.; Bennett Medical College, Chicago, 1912; a Fellow, A.M.A.; aged 61; died, June 11, of coronary thrombosis and chronic myocarditis.

HARRY CONVERSE, Carrollton, Ill.; Missouri Medical College, St. Louis, 1886; aged 68; died suddenly, June 23, of cerebral hemorrhage.

EDWARD LE MOTTE EUSTICE, Kewanee, Ill.; Chicago College of Medicine and Surgery, 1916; member of the Illinois State Medical Society; aged 51; on the staffs of the Kewanee Public Hospital and St. Francis' Hospital, where he died, June 25, of peritonitis, following an operation for appendicitis.

CLAYTON E. FAWCETT, Aurora, Ill.; Hahnemann Medical College and Hospital, Chicago, 1905; aged 55; died, June 22, in the Copley Hospital, of acute myelogenous leukemia.

GARRETT FITZGIBBON, Chicago; Rush Medical College, Chicago, 1889; a Fellow, A.M.A.; aged 76; died, June 3, of carcinoma of the gallbladder.

EARL GREEN, Mount Vernon, Ill.; Bellevue Hospital Medical College, New York, 1884; aged 72; died, June 3, in the Mount Vernon Hospital, following a prostatectomy for prostatic hypertrophy.

WILLIS FRED HARVEY, Rushville, Ill.; College of Physicians and Surgeons, Keokuk, Iowa, 1897; member of the Illinois State Medical Society; past president and secretary of the Schuyler County Medical Society; served during the World War; formerly county coroner; aged 63; died, June 18, of chronic myocarditis.

ABRAHAM L. JOHNSON, Prophetstown, Ill.; Rush Medical College, Chicago, 1891; aged 68; died, June 16, of coronary thrombosis.

CALVIN GRIFFITH McCULLOUGH, Chicago; Starling Medical College, Columbus, Ohio, 1883; aged 71; died, July 4, of cerebral hemorrhage.

EDWIN MCGINNIS, Chicago; Northwestern University Medical School, Chicago, 1904; a Fellow, A.M.A.; assistant clinical professor of laryngology and otology, Rush Medical College; secretary of the American Bronchoscopic Society; member of the American Academy of Ophthalmology and Oto-Laryngology, the American Laryngological Association and the American Laryngological, Rhinological and Otological Society; fellow of the American College of Surgeons; on the staffs of the Chicago Municipal Tuberculosis Sanitarium, Presbyterian Hospital and the Children's Memorial Hospital, the Veterans' Administration Hospital, Hines, and St. Francis' Hospital, Blue Island, Ill.; aged 55; died, July 1, of angina pectoris, in Muskegon, Mich.

JOHN JOSEPH MEANY, Chicago; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1900; a Fellow, A.M.A.; Fellow of the American College of Surgeons; attending surgeon to the West Suburban Hospital, Oak Park, Ill.; aged 54; died, June 7, of angina pectoris.

WILLIAM T. MEFFORD, Riverside, Ill.; Cincinnati College of Medicine and Surgery, 1874; a Fellow, A.M.A.; Medical College of Ohio, Cincinnati, 1880; aged 80; died, May 17, of uremia and chronic nephritis.

ORLEY H. MURPHY, Lincoln, Ill.; Chicago College of Medicine and Surgery, 1917; aged 65; was killed, May 19, in an automobile accident.

FRANK EMIL NAGEL, Chicago; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1900; a Fellow, A.M.A.; acting assistant surgeon, U. S. Public Health Service; aged 57; died, June 20, in the U. S. Marine Hospital, of acute appendicitis and diabetes mellitus.

WILLIAM SYLVESTER ROYCE, Chicago; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, Chicago, 1897; a Fellow, A.M.A.; on the staff of the Westside Hospital; aged 70; died, June 8, of cerebral hemorrhage and diabetes mellitus.

JAMES D. SMITH, Benton, Ill.; American Medical College, St. Louis, 1879; member of the Illinois State

Medical Society; aged 94; died, May 19, of an injury to the hip.

JAMES W. SMITH, Cutler, Ill.; Missouri Medical College, St. Louis, 1881; aged 79; died, June 4.

ARTHUR B. STURM, Oak Park, Ill.; Rush Medical College, Chicago, 1899; aged 58; died, June 16, of cerebral hemorrhage.

GEORGE FRANCIS SUKER, Chicago; University of Michigan Medical School, Ann Arbor, 1892; a Fellow, A.M.A.; Chairman of the Section on Ophthalmology, American Medical Association, 1930-1931; member of the American Academy of Ophthalmology and Oto-Laryngology; fellow of the American College of Surgeons; on the staffs of the Post-Graduate Hospital, Cook County Hospital, Grant Hospital and the Edward Hines, Jr., Hospital, Hines, Ill.; aged 63; died, July 2, of coronary sclerosis.

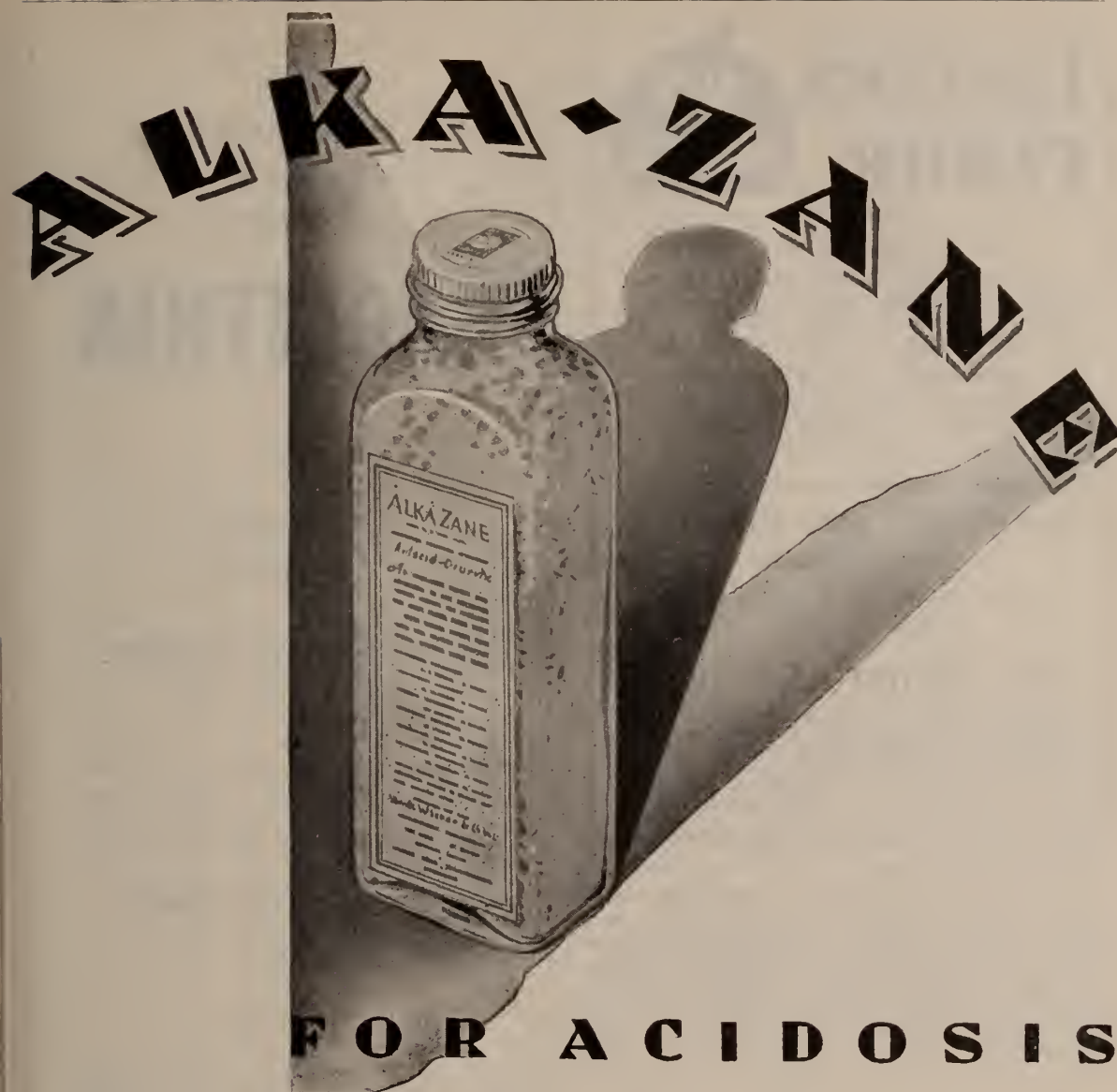
EUGENE PATRICK SULLIVAN, Morrison, Ill.; Rush Medical College, Chicago, 1899; member of the Illinois State Medical Society; served during the World War; aged 59; died, June 28, in the Jackson Park Hospital, Chicago, of pneumonia, as the result of injuries received in a fall.

CARL G. SWENSON, Chicago; Rush Medical College, Chicago, 1891; an affiliate Fellow of the American Medical Association; associate professor of (extramural) surgery, Northwestern University Medical School; fellow of the American College of Surgeons; veteran of the Spanish-American War; on the staff of the Passavant Memorial Hospital; aged 77, died, July 8, of pneumonia.

WILLIAM OSCAR WARREN, Carlyle, Ill.; St. Louis University School of Medicine, 1915; a Fellow, A.M.A.; served during the World War; aged 42; was found dead, May 30.

CHARLES R. WELLS, Wauconda, Ill.; University of Michigan Medical School, Ann Arbor, 1866; aged 88; died, May 6, at Crystal Lake, of myocarditis.

THEODORE MARTIN WIERSEN, Chicago; Bennett College of Eclectic Medicine and Surgery, Chicago, 1906; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1908; aged 55; died, June 1, of hemorrhage due to carcinoma of the stomach.



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Book Reviews

THE MEDICAL CLINICS OF NORTH AMERICA. (Issued serially, one number every other month). Volume 17, No. 1 (New York Number—July 1930.) Octavo of 324 pages with 64 illustrations. Per Clinic year, July, 1933 to May, 1934. Paper, \$12.00; Cloth, \$16.00 net. Philadelphia and London: W. B. Saunders Company, 1933.

The contributors to this number are Drs. Ashe, Blumgarten, Cole, Chapelle, De Sanctis, Epstein, Feinstein, Friedenson, Goldbloom, Goldstein, Graef, Grossman, Harkavy, Highman, MacBrayer, Mackie, Pardee, Poindexter, Ralli, Tenney, Warnshuis, Waterhouse, Weiss.

FRACTURES. BY PAUL B. MAGNUSON, M.D. 317 illustrations. Philadelphia, Montreal & London. J. B. Lippincott. 1933. Price \$5.00.

This work is intended to meet the needs of the man who first sees the fracture. In this work the author simplifies the methods of treatment and approaches the problem of fractures from the standpoint of anatomy and physiology. The operative treatment of fractures has not been included except to indicate certain operative procedures which may be used by those who are skilled in this branch of surgery. As the author states in his Preface, "The object of the book is to advance information which will make simpler and easier the treatment of fractures, and improve the end result."

SURGICAL CLINICS OF NORTH AMERICA. (Issued serially one number every other month.) Volume 13, Number 3. (Lahey Clinic Number—June, 1933.) 275 pages with 98 illustrations. Per Clinic Year (February, 1933, to December, 1933) Paper \$12.00; Cloth, \$16.00 net. Philadelphia and London: W. B. Saunders Company, 1933.

The contributors to this number are in surgery Lahey, Clute, Cattell, Overholt, Ramsey, Hurxthal, Allan, Menard; In anesthesia, Sise; In neurology, Hicks; In nose and throat, Hoover; In neuro-surgery, Herrox; In orthopedics, Haggan; In gastro-entriology, Jordan.

THE RHYTHM. BY LEO J. LATZ, M.D. Latz Foundation. 1932. Price \$1.00.

This work treats the subject of sterility and fertility in women. It discusses the physiological, practical and ethical aspect of the discoveries of Doctors K. Ogino (Japan) and H. Knaus (Austria) regarding the periods when conception is impossible and when possible.

OBSTETRICS AND GYNECOLOGY. By 80 Leading Specialists. Edited by Arthur Hale Curtis, M.D., Professor and Head of the Department of Obstetrics and Gynecology, Northwestern University Medical School; Chief of the Gynecologic Service, Passavant Memorial Hospital, Chicago, Ill. Complete in 3 Volumes and Separate Desk Index. 3,500 pages with 1,664 illustrations, many in colors. Philadelphia and London: W. B. Saunders Company, 1933. Per set, Cloth, \$35.00 net.

Twenty-five of the leading obstetricians and gynecologists of America are contributors to this volume. The work is divided into five principal sections. Section VIII treats of the pathology of labor; Section IX, of the pathology of puerperium; Section X, of operative obstetrics; Section XI, of infectious processes; Section XII, tumors of the uterus; Section XIII, tumors of the ovary, tumors of the fallopian tubes, ligaments, and pelvic cellular tissues.

HOW MANY HAVE YOU SENT HIM?

Last month a certain old practitioner in Chicago mailed letters to physicians with the request that patients be referred to him for "absent treatment." Among other naive statements in the letter was the following: "Don't class me with Christian Scientists and New Thoughters; I use *Volotherapy*—Will-therapy—which is strictly scientific."

The following effusion shows the effect the letter had on our Dr. Ohls:

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H. G. O. —After Walt Mason (a long way).

THINK

"If you think you are beaten, you are,
If you think you dare not, you don't;
If you'd like to win but think you can't,
It's almost certain you won't.
If you think you'll lose, you've lost,
For out in the world we find
Success begins with a fellow's will,
It is all in the state of mind.

"If you think you're outclassed, you are;
You've got to think high to rise,
You've got to be sure of yourself before
You can ever win a prize.
Life's battles don't always go
To the stronger or faster man;
But soon or late the man who wins
Is the man who THINKS HE CAN."

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BRAN

Bran seems to have been overexploited dietetically and therapeutically; to have become a sort of cult whose chief dogmas are, that whole wheat bread is a better food than white bread, and that bran is a good general remedy for constipation. These dogmas are half truths. Whole wheat bread contains more minerals, vitamins and roughage than white bread, but the importance of this fact largely disappears when we consider how easily these deficiencies in white bread can be supplied from other common food stuffs. And against this doubtful advantage of whole wheat bread over white bread must be placed its relative disadvantages. It is less digestible than white bread; whole wheat flour does not keep as well as bolted flour; and the large content of roughage makes whole wheat bread harmful in many cases by causing excessive irritation of the intestinal mucosa and by aggravating morbid conditions. Popular judgment based on long continued and extensive experience is apt to be right; and popular judgment has been rendered in favor of white bread. Whole wheat bread has its virtues, including medicinal virtues, but there is no good reason why it should be preferred generally to white bread. Bran as a remedy for constipation is not of universal application. It may be useful in some forms of atonic constipation, but in the widely prevalent spastic varieties it is contraindicated; and it is also contraindicated in certain morbid conditions of the alimentary tube.

An American recently returned from a trip through Russia, where he had to eat largely the whole wheat bread of the country, says that foreigners from white bread-eating countries are apt to get dysentery from this coarse diet, as he did. The natives, apparently, have a tolerance for this diet. We, no doubt, by practice, could recover in time the ancestral tolerance for bran which we have largely lost. But the advantages of so doing are doubtful. Better is it for us to have a wide variety of food stuffs in our dietary which will supply roughage of various degrees of roughness to suit different bowel conditions. E. E. C.

NICOTINE POISONING BY ABSORPTION
THROUGH THE SKIN

JAMES M. FAULKNER, Boston (*Journal A. M. A.*, May 27, 1933), reports a case of nicotine poisoning which resulted from accidental absorption through the skin of a widely used insecticide containing 40 per cent of free nicotine. The classic features were sweating, nausea, vomiting, dyspnea, coma, convulsive seizures, pin-point pupils, a pulse rate that was at first slowed and later accelerated, subnormal temperature, absence of tendon reflexes, polymorphonuclear leukocytosis, increased blood sugar with glycosuria and electrocardiographic signs suggesting a toxic effect on the myocardium. Nicotine may be demonstrated in the urine. In experiments with cats it was found that small amounts of this substance applied to the intact skin were readily absorbed with fatal results. It was observed that a similar insecticide containing 40 per cent of the sulphate salt of nicotine produced no toxic symptoms when applied to the skin of the cat.

"CAPTAIN OF THE MEN OF DEATH"

"The periodic health examination which is gradually coming into vogue offers some hope of exerting a favorable influence on the mortality of cardiovascular disease by discovery of the condition during its early stages."

This statement is an important part of the advice given by Dr. Richard P. Middleton in a highly interesting article, "Captain of the Men of Death," appearing in the July, 1932, number of the *Atlantic Monthly*.

As all physicians know cardiovascular disease must be conquered or at least controlled if any significant increase in the span of human life is to be made. Dr. Middleton takes issue with the "cocksure confidence in our control over the forces of nature which is so characteristic of the present era," and shows quite clearly that most of the advances in preventive medicine have made life more secure for infants without at the same time benefitting the middle aged to a similar extent.

Medical science possesses no specific relief for degenerative changes in the cardiovascular system but it is quite certain that these changes can at least be retarded by correction of faulty habits and removal of sources of infection. To discover these, it is essential that a periodic physical examination be made even though the procedure may entail a bit of extra worry.

This advice applies particularly to you and to me since nearly sixty percent of deaths among physicians may be ascribed to cardiovascular disease. Every one of us should take this matter seriously and set about to have a complete examination made at once, continuing to follow the plan year after year. *Wayne Co. Bulletin*.

WE ARE DOMINATED BY BUREAUCRATIC
FORCES

Senator William H. King (Congressional Record), speaking of a constitutional crisis said:

"The struggle is now on between the consolidated and powerful Federal Government, dominated by bureaucratic forces, and the rights of the people as individuals, as the sources of power and authority, and the rights of local communities and of the States themselves. And the voices that should be strong for local self-government, for personal liberty, for freedom, and for those principles and policies that make a strong and vigorous democratic people, seem to be silent, and the strident cries of the centralized forces in the land either frighten the people into submissiveness, or win them to the acceptance of dangerous and destructive policies. . . .

"What we need now is a leader who will arouse the people to the necessity of putting hooks in the jaws of the Federal Government and of reviving the spirit of personal independence and local self-government which inspired our fathers in the days of the Revolution. . . . I wish a crusade would be inaugurated in all parts of the land against the accursed spirit of bureaucracy and paternalism. . . . Congress is becoming so impotent that many believe . . . we sit in this chamber merely to O. K. bills prepared by Government officials. It has been charged that we lack courage to resist these demands. There is much to support the charge."

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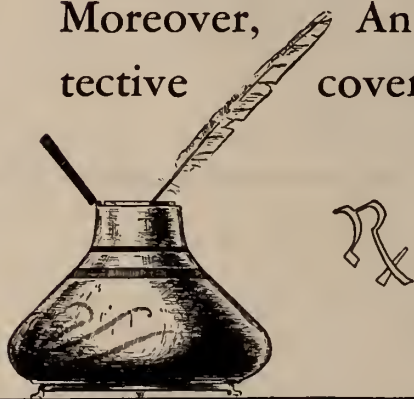
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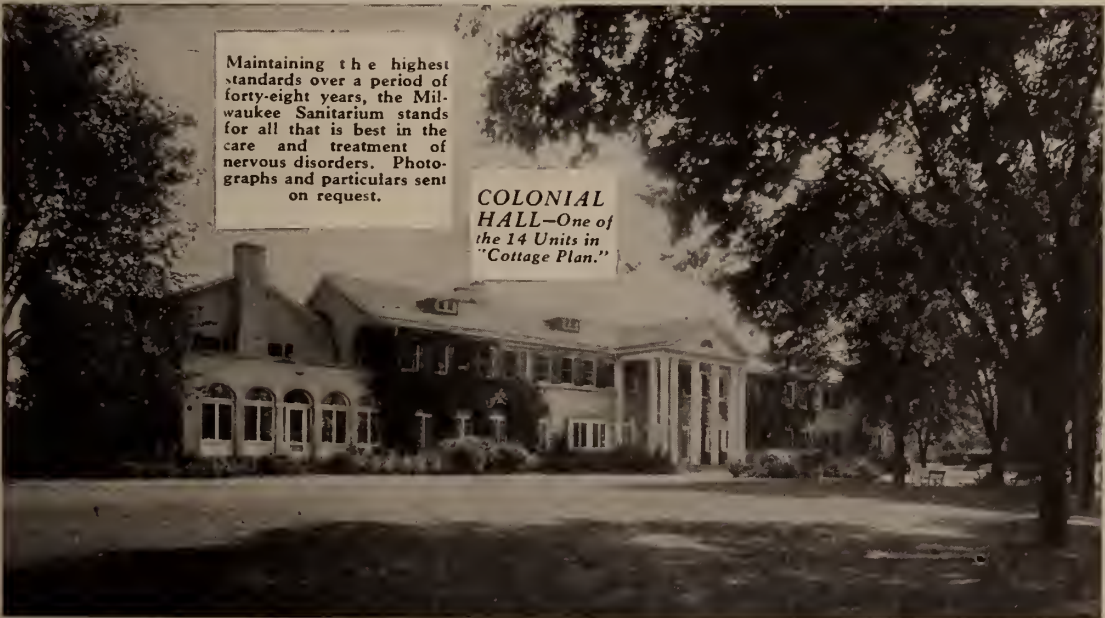
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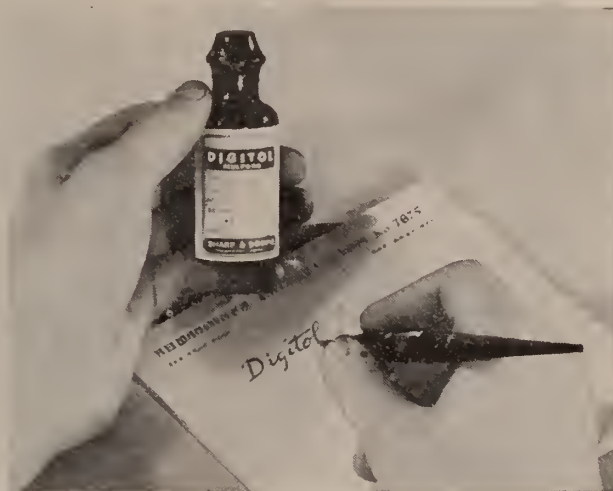
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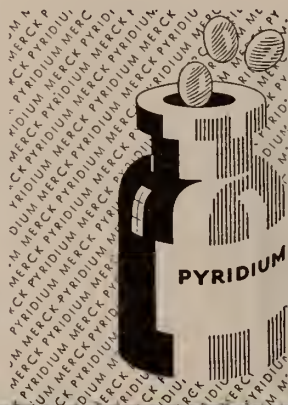
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Preventing NUTRITIONAL ANEMIA in Infants through a Normal Dietary Regimen

NUTRITIONAL anemia was present in 45% of the breast-fed and 51% of the bottle-fed in a group of more than 1,000 infants studied by Mackay.¹ Although this anemia was of mild degree, it was sufficient approximately to double the morbidity among the artificially fed.

Anemia Prevalent

Commenting on this work, the British Advisory Committee on Nutrition writes, "This form of anaemia is prevalent among infants, especially those living under conditions of city life, and is attributed to a deficiency of available iron and possibly also of copper. Its most important feature is susceptibility to infection, particularly a liability to colds, otorrhoea, bronchitis, and enteritis, and a tendency for infections to become chronic."²

Iron, incorporated in powdered milk, should be given as a routine to bottle-fed infants, according to the recommendations of this committee in a report to the Ministry of Health.

Milk Deficient in Iron

Stored in the liver of the full-term infant is a supply of iron and copper theoretically sufficient for the first six months of life. But actually the reserve is subject to wide variation,

	IRON	COPPER
Cow's Milk, 14 oz.	1.01 mg.	0.166 mg.
Dextri-Maltose with Vitamin B, 1 oz.	2.40	0.570
	3.41	0.736
Daily Requirement*	3.11	"traces"

It is generally agreed that breast milk and particularly cow's milk are markedly deficient in iron and copper. But when 1 oz. of Dextri-Maltose with Vitamin B is added to 14 oz. cow's milk, properly diluted (as at 1 month), the above increase in iron and copper results.

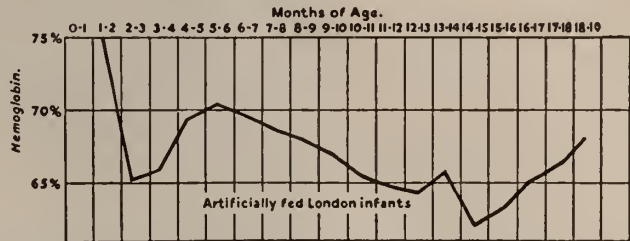
For the same reason that it is desirable to reinforce the milk supply of the infant with iron, the trend is toward the introduction of iron-rich solid foods at an early age. The iron content of many foods is variable, however. Leichsenring and Flor⁴ found that children's diets planned to contain 5 and 8.5 mg. iron actually contained only 3.25 and 6.5 mg., respectively.

	IRON	COPPER
Cow's Milk, 20 oz.	1.44 mg.	0.24 mg.
Dextri-Maltose with Vitamin B, 1½ oz.	3.60	0.855
Mead's Cereal or Pabulum (dry), ¼ oz.	1.70	0.09
	6.74	1.185
Daily Requirement*	4.18	"traces"

When ¼ oz. of Pabulum is fed to the 3-months-old infant receiving 20 oz. cow's milk and 1½ oz. Dextri-Maltose with Vitamin B, a significant increase in iron and copper takes place.

probably because of (except in the case of prematures and twins) variations in the iron content of the mother's diet during pregnancy. Hill, for example, says, "If the mother is anemic herself, or if she has eaten little iron-containing food during the last months of pregnancy, her offspring is born with an insufficient iron deposit. . . ."³

Pabulum, higher than most foods in iron and containing standardized amounts of this mineral can be administered as early as the third month, when nutritional anemia begins to appear (see chart above). Clinical studies by Summerfeldt⁵ show that Mead's Cereal (of which Pabulum is the pre-cooked form) is capable of increasing the hemoglobin percentage of growing children.



Hemoglobin level in the blood of infants of various ages. Note fall in hemoglobin, which is closely parallel to that of diminishing iron reserve in liver of average infant. Chart adapted from Mackay.¹

* The desirable iron intake for children according to Rose *et al.* is 0.76 mg. per 100 calories. Infant of 1 month (8¼ lb.) and infant of 3 months (11¼ lb.), both require 50 calories per lb.*

^{4,5} Bibliography on request.

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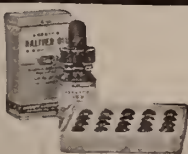


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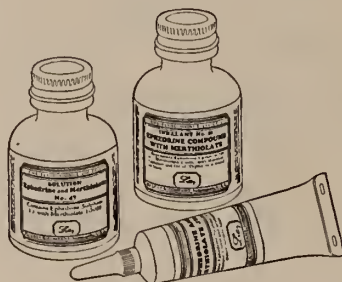
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Editorials

IN THE UNITED STATES THERE IS NO WANTON SLAUGHTER OF MOTHERS AND OF CHILDREN IN CHILDBIRTH

One of the commonest fallacisms fed to the public by the proponents of Sheppard-Towner type of medical control advocates is that under the current state of existence in the United States there is a wanton slaughter of mothers and of children in childbirth.

Statisticians know that any figures can be made to lie. And in the entire field of economic arithmetic probably nothing numerical is so sadly distorted for selfish aims of fanatic socialists as the figures of maternity mortality.

At stated periods some flagrantly misleading and sensational yarn appears to the effect that "the United States takes better care of its brood stock than of its mothers," and "that more mothers are lost in childbirth in the United States than anywhere else in the world," etc., etc.

The indicated panacea for all of this alleged woe is invariably the corollary to the complaint and as invariably shouts from the mountain tops that the way to save mothers and children is by maternity legislation that will afford a lot of jobs to political appointees and add a lot of taxes to the daily burden of the average citizen.

A periodic flood of maternity mortality figures is engulfing us again. It must be remembered that

1. There is no accurate system of comparative mortality figures in maternity cases.

2. Complicating causes of death are subjected to a great variation of analysis in every country.

3. Where maternity cases are involved standards of living and personal as well as community sanitation plays an important part.

4. Even in the deepest days of the depression living standards for Americans were and are

higher than in any other country in the world.

5. Unfortunately the printed word, whether truthful or mendacious, is only too often taken too seriously by the credulous and the semi-ignorant, especially in those matters pertaining to health, and most especially in those health matters involving the reproductive system and the mechanism of creation and birth and in the widely functioning machinery for the distribution of misleading information *the lay managed, lay edited and lay circulated health magazine is one of the most malicious of instruments.*

Half a century ago the poet laureate of England, Alfred Tennyson, wrote, "A lie that is all a lie, may be met and fought with, outright. But a lie that is half a truth is a harder matter to fight." So when a health periodical, with reputable physicians on its staff sets forth error in maternity mortality findings the case is both sad and serious.

Better Health, a bimonthly periodical published at San Francisco, is culpable in its editorial in the issue of April, 1933, with its semi-scientific background and its socialistic utterances that come under the heading of partial veracity.

Wailing the jeremiad of "The Tragic Sacrifice of Mothers" the editorial sets forth tables of comparison and absolutely evades the fact that medical statisticians of repute all over the world admit that there is no universal standard yardstick or any other standardized unit of measure for maternity mortality. Where these statistics are concerned the actuary is worse off than he is when he contemplates the currency situation, past, present and future.

Some of the statements in this editorial to which exception must be taken most strongly are:

These facts are that our country, so remarkable in its development of the means for producing material things, stands twenty-second—practically at the bottom—among civilized countries in the number per thousand of its mothers who die in childbirth; and that 10,000 of the 16,000 mothers who die annually, if given proper care, *need not die*. Each year, 10,000 American women are allowed to perish for lack of proper care. If this care were provided, it is further estimated that not only would the mothers be saved but in addition, 30,000 of the 100,000 babies who now die in the first month of life, would live. Dr. Louis I. Dublin, internationally known statistical expert of the Metropolitan Life Insurance Company, who prepared the above esti-

mates on the basis of the records of the Maternity Center Association, concludes: "There is nothing peculiar to the civilization of the United States to account for the fact that our maternal death rate is more than twice that of such countries as Denmark and the Netherlands. . . . We have allowed things to go on with indifference to the waste of lives of mothers and babies. The situation cries to high heaven for a remedy." It is further amazing to note that besides those nations that Dr. Dublin mentions, five others, Italy, Japan, Hungary, Uruguay and Finland, have maternal death rates *less than half* that of the United States.

Specifically, to mention only some of the nations which take better care of their mothers than does the United States, the death rate of mothers per 1,000 births in Italy is 2.6, in Japan 2.8, the Netherlands 2.9, Hungary 3.0, Spain 3.9, England and Wales 4.1, Irish Free State 4.5, Northern Ireland 4.8, Canada 5.6, Scotland 6.4. and the United States 6.5.

That this high death rate of mothers in our country can be controlled, has been proved by the work of those who have a new conception of Mother's Day. Certain organizations working among mothers have reduced the death rate to 2.2 per thousand live births as against the 6.5 in the country as a whole. To accomplish this, skilled care from the very first intimation of pregnancy until the baby is at least six weeks old, is what is needed. Besides the saving of the mothers' lives, still-births were 42 per cent lower among the women receiving intensive care and infant deaths in the first month of life were reduced in the same circumstances 32 per cent.

Unfortunately for the socialistic theorists, this information does not stand up on its own premise.

What looks to the casual eye like negligent American inefficiency would more truly be termed efficient American conscientiousness.

Take for example an Oriental nation like the Japanese where the deathrate is cited at 2.8 per 1,000. Anyone familiar with obstetrics as practiced in a traditionalized and ancient country such as the land of the Mikado with its oriental attitude towards woman, the rights of her body and the trivial estimation in which female infants are held, the frequency with which the female child is regarded as a curse and as a burden, knows even if it is not an acknowledged fact, the impossibility of accurate comparative maternity mortality. In Oriental countries generally, though Japan's progress is a thing to marvel at, the slave system is far from obsolete.

England is a safer country to deal with on maternity mortality comparative statistics. Yet there is a closer relation between these two countries as England is reported with a 4.1 as

against the United States 6.5. Now this 4.1 per cent includes only England and Wales. Going further into British incidences and adding to this 4.1 these other

	4.1
Irish Free State	4.5
Northern Ireland	4.8
Scotland	6.4
Canada	5.6
	<hr/>
	5) 25.4
	<hr/>
	5.1

It is observed that the English figure might better be 5.09999 and when it comes to a question of maternity supervision, let it be noted that Uruguay which this authority says has a rate of about 3.2%, has a large Indian population with whom statistics are as unruly and foreign an item as the etiquette of a formal levee. To compare there must be a standard of comparison or figures are worthless as are these.

Sir Arthur Newsholme, native of Great Britain and international authority as well as accepted master of actuarial skill, frankly admits the lack of international standardized methods of computation for maternity mortality.

Some few tables that were evolved indicated plainly that statement was entirely false that tried to show that the United States stands in the seventeenth or even in the fifteenth place where a low maternal death rate is concerned.

International comparative standing of any country in regard to maternal death rates cannot be secured with any accuracy until the same system of compilation and elimination of cause and complication is established. For example, the United States Census Bureau will not allow physicians in the United States to follow the English plan of elimination of puerperal deaths in vital statistics, yet Newsholme shows by his process how the death rate in England for one year was reduced from 5.46 to 4.12 per thousand.

Back of all this socialist propaganda is the risen ghost of the iniquitous Sheppard-Towner bill, the favorite puppet of the Children's Bureau of the Department of Labor. Never in all its existence has this group contacted a more successful marionette to pull rich, tax supported jobs out of the burdened citizen than through this system of yowling about help for neglected mothers and children. It is a great

set-up. Some day the truth of it will all come out as truth and murder do. When that occurs, the credulous public will see that it is not so-called "Slaughter" of mothers of which the nation should stand accused but rather of self-slaughter by socialism and by pseudo charity.

MICHIGAN STATE MEDICAL SOCIETY SURVEYS MEDICAL SERVICES AND HEALTH AGENCIES

Distribution of medical care in Michigan is subjected to exhaustive analysis by the Michigan State Medical society through the services of a special committee appointed in accordance with a resolution adopted by the House of Delegates of the state society in session at Pontiac, Mich., during September, 1931.

The report was two years in compilation. As submitted to the 1933 session of the society these findings form a volume of some 200 pages with supplementary charts and indices.

What Michigan medical men have found out about themselves and medicine as it is practiced in Michigan may not be a matter of identical exactitude as to conditions elsewhere. That this information is, however, more or less analogous is certain without a doubt. The two major recommendations made to the Michigan committee at the time it began its work were:

1. That the committee be made a permanent one and that it engage in a comprehensive survey of the medical needs of the state and the available means of meeting these needs:

2. That each county medical society create a committee on public relations to study local problems and to gather data that might lead to their solution.

Such a course was followed. Dr. Nathan Sinai, of the University of Michigan, was appointed director of study. Dr. W. H. Marshall of Flint, Mich., was made chairman of the officiating committee of six.

The summary of the committee's report states a desire to:

"Point out the merits and defects of the existing conditions so that these will stand out clearly both with relation to each other and to conditions as a whole." "Further to present a logical sequence of facts from which logical solution of problems may emerge and win ac-

ceptance by the public and the profession.”

The committee considers that research, which has tended to improve medical science, is also one of the chief causes of current complexities working to an opposite result from the findings of research in industry, in that research in medicine acts to decrease rather than to increase the availability of complete medical service to the average purchaser. Further that a birdseye view of the medical system as a whole “gives the impression of a tremendous expansion taking place within an inelastic circle.”

And that “the processes of new growth, cleaving and expansion have resulted in overcrowding, friction and dissatisfaction within the circle. The problem is to create a new and larger circle.”

PERHAPS!

At any rate the sum total of the summary states that the “major problems and programs facing the public in Michigan are:

“1. Continued study and preparation for meeting immediate needs in the distribution of medical service.

“2. Distribution of the burden of costs to the end that adequate medical care may be provided for all of the people.

“3. A more equitable arrangement for the care of the indigent sick.

“4. Need for better distribution of medical facilities in the sparsely settled rural areas.

“5. Wider distribution and a better co-ordination of public health activities.”

It can be seen that this committee would seem to have proceeded no further along than the great mass of individual thinking physicians as to the “flaws in the circle”; in fact from some of the recommendations even perhaps not quite so far. For instance on page 171 of the report in the subsection “Chapter 12, Conclusions and Recommendations,” the statement is set forth,—

“The recommendations of the committee are as follows:

“1. That the House of Delegates *approve the principle of health insurance.*

“2. That the Committee on Medical Economics be directed to prepare and present, for the approval of the House of Delegates, a plan or plans for health insurance: provided, however, that such a plan or plans shall be based upon the following policies:

“(a) Free choice of physicians by the insured;

“(b) The limitation of benefits to those of medical service;

“(c) The control of medical service benefits by the profession;

“(d) The exclusion of individuals or organizations that might engage in health insurance for profit.”

All of which is calculated to so whitewash the “principle of health insurance” so that this menacing wolf of the medical profession might, in a dark night and by a crew of blind men, be *almost* mistaken for a sheep.

When it comes to any theoretical ideas about health insurance it will pay the medical profession again to reconsider Patrick Henry—“I have but one lamp by which my feet are guided and that is the lamp of experience.”

Even such fluid amendments of feeble performance but loud promise such as the committee recommends will not put any so-called “principle of health insurance” in good standing with that percentage of the profession which retains sanity of perspective. European experience with health insurance both in “principle” and in performance is to-day a stench in the nostrils.

As to medical care of indigents and an equalization of “rich” patients of whom the report comments “the number is too small to make equalization possible” the “committee therefore recommends:

“1. That the community and the medical profession undertake the medical care of the indigent as a joint responsibility;

“2. That the costs of medical care for the indigent be met through a contribution of funds by the community and a partial contribution of services by the medical profession;

“3. That the community funds must be used *to compensate in part* the physicians for services rendered to indigents and that such compensation be in proportion to the amount of service provided;

“4. That the community centralize in a single agency the social and economic appraisal of the individual’s or family’s right to such medical service;

“5. That local committees on medical economics institute studies and develop plans in accordance with the above recommendations;

"6. That the state committee on medical economics collect and analyze data pertaining to the costs of medical care for indigents and plans for providing service and that these data be made available to local committees."

It will be noted that nothing in these recommendations for the medical care of indigents takes drastic stand against the chance of *Lay Interference* for which an excellent loophole is left in the statement "that the *community centralize in one agency* the social and economic appraisal of the individual's or family's right to such medical service."

Further the term is used "community funds," which in the line of experience can be recruited only by tax levies or by such donations from wealthy philanthropists as would tend to bring expenditure of such funds completely under lay control. A tax levy would hit the medical profession as to date doctors are not tax exempt. The doctors would be worse off than before.

Relative to the problem of the subvention of medical service the "committee recommends that:

"1. The house of delegates approve the principle of subvention through state or local funds to assure reasonably adequate medical care for residents in the sparsely settled areas and reasonably adequate incomes and facilities for medical personnel."

"(Here it will be noted is another chance to sock the taxpayer. 'State or local funds' are simply tax levies—nothing more. *A tax levy on those who can be taxed is the socialist's idea of paradise.*)

"2. That the committee on medical economics institute local detailed studies to determine the need for medical personnel and facilities in such areas."

As to the question of public health service the "committee recommends that:

"1. The county be established as the basic unit of public health administration including school health administration and that the jurisdiction and activities of the county health department extend to all cities in the county."

If that isn't a loaded joker, what is?

"This recommendation is intended to place the health department in a position to correlate all health activities of a public nature in the county."

The next two recommendations are simply routine form recommendations as to the consolidation of counties into districts as is now a purely Michigan law and then comes recommendation number four which is "That counties be assisted in the financing of health departments *by state funds.*"

As to the scope of the much discussed hospital of the University of Michigan, the report reads: "In its consideration of the place of the University hospital in the scheme of medical care, the committee views this institution not as an entity but as a related cog in the system.

"Hence if an orderly development results from the recommendations already made it is felt that most of the causes of friction and misunderstanding will be removed. Therefore the committee recommends as follows:

"1. That the University adopt a policy which will lead to a restriction of those activities of the hospital to those efforts directed toward medical education;

"2. That the committee on medical economics of the Michigan State Medical society request the appointment of a committee to prepare a plan to effect this policy as early as is compatible with public welfare."

As to group practice, the statement is made that "the committee feels that it has insufficient data upon which to base a judgment concerning the merits or defects of group practice. This form of practice is not well defined since it may include anything from a rather loose agreement between two or three physicians to a huge organization of personnel and facilities." "The committee feels that at this time, the question of group practice is secondary to the items already presented."

From this cursory epitome of the conclusions of the Michigan committee, the average practitioner is apt to voice as his own idea, "Can any good come out of Nazareth?"

Painstaking indeed is this detailed report. It touches upon everything from Michigan geology and history to the low average income of high grade physicians. But in all this wealth of mind and matter two principles seem to have been made subservient to expediency and these are that medicine is a matter for medical men, in its practice, its economics and its control, and that the source of state and

community funds is the ancient evil of heavy taxation.

"Health insurance" is one of the high sounding levers with which tax levies are raised. From any angle and all angles health insurance in its current interpretation is a socialistic gouge.

About the worst thing that could be said of this report has been said by the reporters themselves. For the committee stands condemned out of its own mouth in the direct and decisive statement:

"We recommend that the House of Delegates of the Michigan State Medical society approve of the principle of Health Insurance."

And not all of the fine phraseology pro and con in the report directly preceding this statement, can make one iota of difference.

DOCTOR OHLS WITH THE ILLINOIS MEDICAL JOURNAL TWENTY-FIVE YEARS

The ILLINOIS MEDICAL JOURNAL was but a gangling juvenile of ten years' existence when Henry Garnsey Ohls, Ph.B., M.D., first took a hand in its upbringing and direction. That was twenty-five years ago. This is the silver anniversary of Dr. Ohls' connection with what has become an outstanding contemporary medical periodical.

It is plain and unvarnished veracity, to state that this silver anniversary is the pinnacle of a pyramid of twenty-five years of sterling service beaten into shape from the shining integrity, sterling qualities and solid wisdom of a man who is a philosopher of parts as well as a philosophic physician.

Dr. Ohls is one of these "born-in-Chicago-and-proud-of-it" citizens. Born in Chicago "before the great fire of 1871," he passed a happy and comfortably envired boyhood in Hinsdale. The local schools all knew him. But whether they loved him or not is less a matter of record than that all reminiscences of "Harry" Ohls stress his unselfish, loyal, overly modest disposition and his kindly outlook upon life as well as his gentlemanly attitude towards even the most untoward complications.

Dr. Ohls received the degree of bachelor of philosophy from the University of Michigan in 1883. Among his other undergraduate per-

formances was to share in the founding of the student publication, "The Michigan Argonaut", and to serve on the first board of directors. His work there stood him in good stead when he stepped into his job with the ILLINOIS MEDICAL JOURNAL. An "original Argonaut," he is still seeking the "golden fleece." Though as with most of the medical profession this mythical wool still evades him, Dr. Ohls has helped in more than one instance to shear off the sheepskin from many a socialistic wolf masquerading as a lamb in the grand parade of current socialistic propaganda.



HENRY GARNSEY OHLS, Ph. B., M.D.

This program of medical efficiency by the official organ of the medical profession in Illinois, and in which Dr. Ohls' judgment has been of such import and value, has lifted The ILLINOIS MEDICAL JOURNAL from state to national prominence, in the fight to save the medical profession, and the practice of medicine, and in fact the nation itself from the enroachments of socialism and communism. Dr. Ohls has been practically in the thick of this fight since the day he began on the editorial staff

of the Journal. He came in as assistant to Dr. George Edwin Baxter who was managing editor while Dr. George N. Kreider of Springfield was editor-in-chief. The membership of The Illinois State Medical Society was then but a fraction of what it is to-day. The Journal itself was only forty per cent of its present size and with only one third the number of its present pages, printed then but one column to the page.

Naturally enough, the changes of twenty-five years are numerous and varied, and a bit startling. There have been almost as many changes in Dr. Ohls as in the Journal, but underlying principles in both remain the same.

Never since the day in 1887 that Harry Ohls walked off with a sheepskin from Rush Medical College has the physician submerged the philosopher. That marvelous mental asset has carried Dr. Ohls through the obstacles of the years beginning with his youthful assistantship to Walter S. Haines, professor of chemistry, three subsequent years of practice in Clinton, Iowa, postgraduate work at Chicago Polyclinic where he recalled with gratitude and great benefit his special class work at Cook County hospital under the late Dr. John B. Murphy, his seven years' work from 1893 to 1900 as assistant to Prof. E. Fletcher Ingals, his four succeeding years of practice at Odell, Ill., and his association in 1905 with the American Medical Association. That same year Dr. Ohls joined the staff of the Chicago Department of Health where, since 1925, he has been assistant chief of the bureau of vital statistics.

Joining the staff of the ILLINOIS MEDICAL JOURNAL in 1909, since 1913 Dr. Ohls has been its managing editor. In between times among other things, for several years, Dr. Ohls aided Dr. Ingals in the editing of the nose and throat section of the American Year Book of Medicine and Surgery.

Above all, Dr. Ohls has never failed to be a good citizen, friend and neighbor as well as a ruthless crusader for what he thinks the right and the justice of life. Whatever else his liabilities, Henry Garnsey Ohls, Ph.B., M.D., refuses emphatically to join in even surface worship to false gods and money changers in the practice of medicine. The ILLINOIS MEDICAL JOURNAL is to be congratulated upon its possession of Dr. Ohls.

CHICAGO TO BE WORLD MEDICAL CENTER

The opening of the Cook County School of Medicine, in affiliation with the Cook County Hospital, meets the great need of more than a half century in medical education in this country. It is the hope of the faculty that in giving to the medical profession the opportunity of graduate study in an ideal environment under expert supervision and with the almost unlimited facilities of the Cook County Hospital, it is satisfying demands placed upon the doctor by a modern civilization with its advancement in medical science.

The faculty of the school includes the Attending Staff of the Cook County Hospital. The faculty is convinced that only upon the foundation of a thorough medical and surgical training can one build the superstructure of a successful medical career. The early knowledge acquired from the fundamentals in medicine must be reinforced by a substantial training such as can be realized only when opportunity is offered for the repeated study of a large amount of clinical material. It is the purpose of the Cook County Graduate School of Medicine by its affiliation with the Cook County Hospital with its 3300 beds to offer such a study of all classes of medical and surgical cases.

The school recently completed an intensive course in pediatrics given to a group of Michigan Doctors sponsored by the Kellogg Foundation of Battle Creek, Michigan. These doctors are the medical advisors to the indigent children of the State of Michigan whose medical care is provided for by the Kellogg Foundation. The course was arranged by Dr. Maurice Blatt, Chief of Staff of Children's Division of Cook County Hospital. The course included the following subjects: Endocrine Disturbances, Childhood Tuberculosis, Preventive Medicine, Laboratory Diagnosis, X-ray Diagnosis, Rheumatic Infections, Allergic Testing, the Acute Abdomen, Spinal Fluid, Blood Chemistry, Care of Newborn, Allergic Manifestations, Diseases of the Lungs, Surgical Diagnosis, Orthopedic Diagnosis, Diseases of Metabolism, Rheumatic Heart, Pathological Conferences, Contagious Diseases, G. I. Disorders in older children, Electrocardiography, Nursing Dietetics, Mental Hygiene, the Role

of Vitamines in Disease, Fractures, Pediatric Procedures, Neurology, Common Eye Diseases, Disorders of Nose and Throat, Skin, Gonorrhea and Syphilis, Pathologic Feeders and Infant Feeding. The lectures and presentations were given by all members of the Attending Staff of the Children's Hospital including such well known pediatricians as Dr. Julius Hess, Dr. Karl A. Meyer, Medical Superintendent of Cook County Hospital, Dr. R. W. McNealy, Dr. Philip Lewin, members of Surgical Staff of Cook County Hospital; Dr. Wm. F. Moncreiff, Chief of Eye Department, Dr. Samuel Pearlman of Ear, Nose & Throat Department, Dr. Max Wien of Department of Dermatology; and Dr. Richard Jaffe, Chief Pathologist of the Hospital, participated in the course.

The School offers continuous informal and intensive courses in all branches of Medicine, General Surgery, Obstetrics, Gynecology, Ear, Nose and Throat, Ophthalmology, Urology, Cystoscopy, Dermatology and Syphilis, Physical Therapy, Anatomy, Pathology, X-ray, Laboratory Technique and Fractures. The courses are given by all members of the Attending Staff of the Cook County Hospital which comprises the Teaching Faculty of the School. The administrative affairs of the School are directed by a Board of Trustees consisting of the following members: Dr. Karl A. Meyer, Dr. R. W. McNealy, Dr. Philip Kreuscher, Dr. Frederick Tice, Dr. Wm. F. Moncreiff, Dr. Aaron Arkin, Dr. Richard Jaffe, and Dr. T. C. Galloway.

During recent months the Cook County Graduate School of Medicine has given courses to doctors from all parts of the United States, Canada, South America, Hawaii and the Philippine Islands.

THE ECONOMIC PLIGHT OF DOCTORS AND HOSPITALS

The economic plight of doctors and of hospitals is arousing their respective clientele as well as statisticians and economists.

In Great Britain, which has led the world into the slump and up again, the hospital situation became so very acute that the state made a grant of five hundred thousand pounds for the continuance of voluntary hospitals.

It is expected, too, that physicians' incomes will be about the last to rally from the consequences of economic depression.

What will be the result?

Will medical care and medical men be put upon state and federal payrolls bringing the guardians of the health of the nation into the same status as those who guard it against crime and fire hazard—the police and the firemen?

The question has already been raised in more than one community.

Already 110 voluntary hospitals have had to suspend.

Some rational plan of financing for both hospitals and the profession would seem to be of imminent necessity.

CALIFORNIA LAW REGULATES CLINICS

Nowadays if anybody wants to start a clinic in California he must get out and show that such service is needed by the community for which the clinic is planned.

It may not be amiss to print a few excerpts from California's clinic law:

Excerpts from the law follow:

Sec. 1. A clinic and dispensary is defined to be a place, establishment or institution maintained, conducted and operated by a person, firm, association or corporation (a) for the purpose of furnishing at such establishment or institution, without charge or for part pay or full pay, advice, diagnosis, treatment, medicines, etc., to any person or persons afflicted with bodily or mental diseases or injuries, or (b) except in the case of governmental health officers or school employers performing the duties of their office for the purpose of advising and informing persons of means and measures to prevent or avoid disease or injury.

Sec. 2. It shall be unlawful for any person, firm, association or corporation to maintain, conduct or operate any clinic and dispensary as herein defined within the State of California, whether termed or called a clinic or dispensary or health center or by any other designation of like import, in violation of the provisions of this act, or without first obtaining a permit from the State Board of Public Health as hereinafter provided.

Sec. 3. Clinics and dispensaries shall be of five classes as follows: (1) Charitable; (2) teaching and research; (3) employer's; (4) private pay; and (5) governmental.

Sec. 4. No corporation other than a charitable, benevolent or educational corporation shall conduct, maintain, or operate charitable or teaching and research clinics and dispensaries, and no person or firm or association shall conduct or operate charitable or teaching

and research clinics and dispensaries except for benevolent, charitable or educational purposes; no employer shall conduct or operate an employer's clinic and dispensary for profit; no private pay clinic licensed under the laws of the State of California to practice medicine or surgery or dentistry or osteopathy or chiropractic or drugless healing.

Sec. 5. All applications for conducting and operating a clinic and dispensary of any class shall be made in writing to the State Board of Public Health for a permit thereof. The application shall contain the following; name or names, address of applicant, establishment or institution in which the clinic and dispensary is to be maintained, conducted or operated; names and addresses of those operating same; the class of clinic and dispensary; the names and addresses of the professional licentiate or licentiates responsible for the maintenance of the same; kind and nature of advice and treatment given or to be given therein; description of building, including location, facilities, equipment, apparatus and appliances to be furnished; sources of funds and income; amount of the administrative or other charges to be made against patients and (except in the case of private pay clinics and dispensaries), the schedule of fees to be charged patients; and such additional information as the Director of Public Health and State Board of Public Health shall require. Said application shall be verified before an officer of the State of California authorized to administer oaths by the person or a member of the firm or association or an officer of the corporation making the application. Application for permit must be made annually by every person, firm or corporation maintaining, conducting and operating a clinic and dispensary other than the United States of America or any department, official or agency thereof.

Sec. 6. Upon the filing of any such application, it shall be the duty of the Director of Public Health to make or cause to be made diligent inquiry and investigate into the facts set forth in said application and if he shall find that the statements and representations contained in such application are true and that the establishment or the continued maintenance, conduct and operation of such clinic and dispensary is in conformity with the intent and purpose of this act and that there is need for such clinic and dispensary in the community in which it is or is proposed to be maintained, conducted and operated, and that the establishment or the continued maintenance, conduct and operation thereof is for the benefit of the public health, he shall so report to the State Board of Public Health and the board shall issue such permit or cause such permit to be issued. In the event that it shall not within three months after the filing of application thereof, issue or cause to be issued such permit, it shall state the grounds and reasons for such refusal thereof in writing, furnishing a copy thereof to the applicant.

The Director of Public Health is hereby authorized and empowered at any time to visit, enter, examine and inspect either personally or through a duly authorized agent the premises occupied, maintained and conducted

by any clinic and dispensary, and examine all matters in relation thereto. The State Board of Public Health may designate any city, city and county, or county health officer its agent for the purpose of this section. After due notice to a clinic and dispensary and reasonable opportunity for it to be heard, the State Board of Public Health may, if it shall appear that such clinic and dispensary has violated the provisions of this act, revoke the permit of such clinic and dispensary by written order. Such an order shall state the grounds and reasons for revoking such permit and the time at which such revocation shall take effect and such order shall be subject to review by the superior court in and for the county or city and county in which the clinic and dispensary is situate.

Sec. 7. The Director of Public Health shall annually compile a list of the clinics and dispensaries maintained, conducted and operated by the United States of America, or any department of official or agency thereof within the State of California, and a record showing the address at which each of said clinics and dispensaries is situate, the department of official or agency of the United States maintaining, conducting and operating the clinic, the purpose thereof, and such additional or any other obtainable information in regard thereto as the Director of Public Health or the State Board of Public Health shall require of the other classes of clinics and dispensaries pursuant thereto by any rule or regulation adopted under the provisions hereof.

Sec. 8. The State Board of Public Health is hereby authorized and empowered to make from time to time such reasonable rules and regulations for the maintenance, conduct and operation of clinics and dispensaries in order to provide therein adequate facilities, equipment and appliances, the attendance and services of duly qualified licensed practitioners of the healing art, to secure sufficient information showing the necessity, basis and method of appealing to the public for funds for the support thereof, to avoid unnecessary or wasteful duplication of services, to show the need of the community, or of the persons proposed to be advised or treated for the service rendered or proposed to be rendered, and to regulate the purposes and objects for which said funds are applied and to amend or repeal any thereof.

Sec. 9. Said permits shall contain at least the following: the name and address of the clinic and dispensary; the names with addresses of the owners of the clinic and dispensary; the name or names and addresses of the persons charged with the management, conduct and operation of the clinic; the class of clinic and dispensary licensed to be operated thereunder; and the year covered by the permit. All permits shall be signed or countersigned by the Director of Public Health. All clinics and dispensaries and the several classes thereof as herein specified other than governmental clinics and dispensaries shall pay prior to the issuance of permit thereto an annual permit fee in the sum of not less than five (5) dollars and not more than twenty-five (25) dollars to the State Board of Public Health.

Sec. 11. Every clinic or dispensary holding a permit shall on or before the fifteenth day of February of each year file with the State Board of Public Health upon forms to be furnished by the board, a verified report stating (a) the number of patients treated, (b) aggregate amount of administration or other charges or fees collected from said patients, (c) total amount of money or property received for the support, maintenance or operation of said clinic and dispensary, and (d) such other information and data as the State Board of Public Health shall require. The State Board of Public Health shall prepare and file an annual report of the clinics and dispensaries holding permits granted, and said report shall be printed and published at least once a year and distributed at the cost of printing thereof by the State Board of Public Health.

Sec. 12. Any person, firm, association or corporation who maintains or conducts or operates or assists in maintaining or conducting or operating any clinic and dispensary as herein defined and without having complied with the provisions of this act, or any rule or regulation herein provided for, shall be guilty of a misdemeanor and upon conviction shall be punished by imprisonment in the county jail for not more than six months or by a fine not to exceed \$500 or both such fine and imprisonment.

LORD SAVE THE EDITOR FROM SUCH A FATE

The editor of the *Indiana Medical Journal*, July issue, comments editorially on some of the problems of the editor of a medical journal as follows:

One of the chiefest joys in the life of a medical editor lies in reading the letters that come in after every issue. The letters we enjoy most are those having to do with some editorial contribution written by another, particularly when the letter in question is of a most critical nature. The editor does not write all the editorials nor all the editorial notes—Lord, save him from such a fate! As was said in the first issue of *The Journal*, under the present regime, we solicit material of every sort from our general membership. It is our province to edit such material and to determine whether it shall be used, how and when. When we use a contribution from one who is presumed to be an authority on the subject under discussion, then get "bawled out" for the opinions therein expressed, it gives us much pleasure to refer the matter to the author and let him go to it with his critic. Occasionally the ensuing battle is of the hammer-and-tongs variety, all of which pleases us greatly. We get plenty of criticism,

directly applied, and to have some one else take some of it is quite in order.

MEETING OF THE COUNTIES COMPRISING THE FIFTH COUNCILOR DISTRICT

The counties comprising the fifth councilor district will have a meeting with the Sangamon County Medical Society at Springfield, October 5. Dinner at 6 p. m., Leland Hotel.

The guest speaker will be Dr. Ralph Pemberton, associate Professor of Medicine, University of Pennsylvania and chairman of the American committee for the Control of Rheumatism.

The title of the speaker's address will be "*The Control of Rheumatism.*"

ADVERTISING SOLICITORS WANTED

The ILLINOIS MEDICAL JOURNAL desires in Chicago and in each of the principal cities in the United States solicitors, preferably persons with medical advertising experience. No guaranteed salary. Compensation solely on commission basis.

ILLINOIS MEDICAL JOURNAL
6221 Kenmore Ave., Chicago, Illinois

PREVENTABLE INVALIDISM FOLLOWING CHILDBIRTH

According to JENNINGS C. LITZENBERG, Minneapolis (*Journal A. M. A.*, Nov. 19, 1932), the ultimate welfare of the parturient woman cannot be secured by good antepartum and intrapartum care alone but requires equally good postpartum attention. Meticulous care is necessary during the lying-in period, and careful examination is essential at the end of it to detect and correct any abnormalities. Care consists of prevention of hemorrhage at delivery and the discovery and treatment of anemia post partum. Toxemias must be followed to the complete eradication of all conditions which may lead to chronic nephritis. Displacements of the uterus must be corrected, for a large percentage can be cured. All infections must be followed to complete cure and elimination of chronic sequelae as far as is possible. Reexamination must be made at the end of the intermediate puerperium to discover recurrence or occurrence of abnormal conditions. Observation must be continued until the mother is restored to perfect health, however long that may require. If adequate postpartum care is not carried to its ultimate conclusion, the consequences may be grave anemia, general ill health, nephritis, permanent displacement of the uterus, grave cardiac lesions, neurosis, psychosis, chronic cervicitis, cancer and death.

Correspondence

THE MURDERERS OF DOCTOR GARNITZ SENTENCED TO A TERM OF ONE HUNDRED YEARS EACH.

On Monday, August 14th, Matthew Novak, Charles Kubala and Joseph Borowy entered a plea of guilty to the charge of murdering Dr. B. F. Garnitz in an attempted holdup on February 24, 1933.

After hearing the evidence, Judge Benjamin Epstein sentenced each defendant to a term of one hundred years in the penitentiary. Through the holdup of physicians answering fake sick calls at night, the physicians were becoming so skeptical of night calls that people were suffering because of their inability to secure medical attention. Judge Epstein's decision assures the medical profession and the public that their common interests will be protected.

The people of Cook County are to be congratulated on having elected as one of their judges a man with the legal ability, the moral courage and sense of justice of Benjamin Epstein.

We publicly express the appreciation of the members of the Chicago Medical Society to Judge Epstein.

THOMAS P. FOLEY, Secretary.

C. M. S. B.

THE MEDICAL PROFESSION AWAKENS FROM ITS LETHARGY

Chicago, Ill.

July 24, 1933

Permit me to congratulate you again upon your editorial in the July issue of the Journal, wherein you again call attention to the multiplicities of the inimitable situation that confronts the doctors, and which is consonant with your ideas and policies as long as I have followed you.

Meantime, I wish to call your attention to the fact that on page fifty of the Chicago Medical Society bulletin you will find that Gabriel is actually tooting his horn, . . . The Evanston branch has finally awakened to the fact that it is not *infra-dig* actually to discuss economic problems at their meetings. In fact, you will now find that this article states that, "economic problems have demanded a large proportion of time at the meetings . . . Notable

in this respect was the meeting on the ecst of medical care . . . attended by 200 physicians and guests, probably the largest number of physicians that have ever attended any single meeting of this society."

This is phenomenal and is highly instructive, because, when the Evanston branch of the Chicago Medical Society has become such a convert to discussing actually the problem of the practitioner being able to make enough money to pay his bills, it is second only to the American Revolution, and, of equal importance, even though deprived of its Boston Tea Party.

A persistent comer in the mail of all physicians is "Medical Economics," and, the July issue of that contains an article on "How long can the profession overlook this challenge?" by Dr. H. Sheridan Baketel. I think that this "challenge" is particularly apropos. All of these things are in line with your masterful editorial. I merely want to reiterate that your article provoked considerable comment. I think you have heard from some of them already. However, the important thing is the medical profession being an active, aggressive and constructive programme.

What do you think of the idea of getting together a group of the leading thinkers in medicine with the idea of formulating an outline of this plan? You have so much knowledge and so many contacts that I believe that you could put these ideas and all of this force into action. It must be well thought out, basically sound and with every safeguard necessary to guarantee justice both to the laity and to the profession. There are hundreds of other physicians who will also respond to a call to arms. I also believe that there should be lay representation in our final set-up of a programme for mutual benefit for the profession and the laity.

It is high time to start and who could make a better beginning?

A. M. M.

TUBERCULOUS PATIENTS IN GENERAL HOSPITALS

Miami, Fla.

To the Editor: In the August, 1933, number of the ILLINOIS MEDICAL JOURNAL (page 105) appears an editorial putting forth the question; if general hospital care should not be extended to the unfortunate tuberculous individual, the

general hospital to open its doors and allow these patients to come in for either observation, care or treatment. This paper is quite interesting, appeals to the humanitarian spirit; is however, open to much criticism.

There is no doubt that every director of the general hospital, every member of the medical staff, every interne, every nurse, would be more than willing to cooperate with any agency which would place the tuberculous patient into the spare, into the unoccupied beds of a general hospital but how about the feelings, the sentiment of the good patients of the general hospital, the people who defray the expenses of running, of maintaining, the upkeep of the hospital?

A good hospital, with a capacity of about 150 beds, finds that only 70%, at the best time, of the beds are occupied, and is more than willing to assign the other 30% to the tuberculous. But try and fill these spare 30% beds with tuberculous patients, and you will find a steady increase of empty beds; for every spare bed that you will fill with a tuberculous person two beds will be vacated by the general hospital patients—there will be a general exodus and the empty bed capacity will become gradually greater.

There is not a private hospital in any part of our country which would not permit the tuberculous patient to come into the wards as a bed occupant, if it were not for the apprehensions of the general public who are too imbued with the thought that the doctor is simply spreading this dreaded menace and when a tuberculosis specialist constantly speaks about a tuberculosis menace, what different conclusions can the general reader infer—he who is a patient at a private hospital and he finally concludes that the doctor must be a great hero to cope with this dreadful menace, tuberculosis.

Dr. Goldberg puts the cart before the horse. Any good hospital may become the asylum for the tuberculous if first you can educate the general public to the fact, and a great fact it is, that this disease, tuberculosis, is, after all, not so great a menace to society, that the healthy person can not contract this disease by speaking, by shaking hands, or associating in a general way with an active tuberculous person. Further, the doctor states that *many* of the tuberculous patients can afford to pay.

Perhaps nearer the truth if he had stated that a *few* of the tuberculous patients could pay. Take a private tuberculosis Sanatorium and see how many patients are there who themselves pay for the services which they receive. In making inquiries you will learn that but few pay for their upkeep, that usually a brother or a sister, an uncle or an aunt, a fraternal lodge or a life insurance defray the necessary expense. If however, this pay should stop then the poor unfortunate tuberculous individual seeks shelter in a free City, County or State Sanatorium.

Properly cared for the tuberculous individual is not a menace to the hospital population and he can be admitted without detriment to hospital routine or hospital patients. This paragraph embraces much truth, but how about its application? And we read on—do everything possible to minimize or eliminate that menace and every open case of tuberculosis is a potential community menace. The tuberculous individual reads this, that he is a menace and says: So I am a menace to my family, to my friends, to my neighbors. The patient occupying a bed in a general hospital, a non-tuberculous individual, reads that the doctor has said that the tuberculous person is a potential menace to his neighbors. Now, does any sane person believe that this patient, now in the general hospital, occupying a bed, wants this menace to occupy an adjacent bed or live in the hospital under the same roof?

My belief, to bring about a better, a more secure feeling between the tuberculous and the non-tuberculous individual, is more enlightenment, more truth about this disease. Eliminate the horrid and vulgar word “menace” from your vocabulary. Allay the inborn, the unnatural fear, convince the public that tuberculosis, after all, with ordinary care, is not so dangerous a disease, is neither infectious nor contagious to adults; eliminate the fear which ignorant people have inculcated into the minds of the public, give to the public a better understanding, concerning tuberculosis and perhaps its sister disease, leprosy; then and only then will we be able to admit the unfortunate patient to the care and treatment in the general hospital.

In the Municipal Tuberculosis Sanitarium at the present moment there are about 1,000 tuberculous patients in all stages, in every condition

of the disease, and we have never been apprized that in the last 15 years of its existence that a non-tuberculous attendant, nurse or physician, contracted tuberculosis; so after all, tuberculosis is not so great a menace.

In the married state, in which usually the most intimate relationship nearly always exists, tuberculosis of both husband and wife at one and the same time is very infrequent; here the percentage is estimated at about 2. With how many cases does the physician doing tuberculosis work become acquainted where both the husband and the wife are sickened with the disease at the same time? Now, more than that, and this is quite interesting. If at any time the actively tuberculous member be called away, either in death or being placed into a tuberculosis Sanatorium, the remaining member, although undoubtedly infected, perhaps already slightly tuberculously diseased, heals out, is spontaneously cured; this is due to the oft repeated slight infection and a gradual immunization; all this goes to prove that after all, tuberculosis is not so great a menace in adult life.

The statement made by the doctor that research in tuberculosis is lagging is misleading, is a misstatement. Secure a copy of an abstract of the papers read at the 29th Annual Tuberculosis Meeting at Toronto, Canada, in June last and see if this interest is lagging. This was the 29th meeting of our Association and for one who has attended at least 20 of these annual meetings, I can only vouch for the steadily increasing interest and progress in tuberculosis research. This meeting was a most enthusiastic gathering of men and women interested in the tuberculosis problem—there seems to be no lagging in this field.

Apropos. Throughout the mentioned paper appear a few words which may need correction. The word "Sanatorium" appears 19 times and the word "Sanitarium" but twice. If the latter two refer to an institution for the care of tuberculous patients, then the words are incorrectly used. When and how to use one or the other—consult any Standard Dictionary. For instance, the larger institution for the care of the tuberculous in your City is known as the Municipal Tuberculosis Sanatorium. Here the word Sanitarium was written into the bill permitting the community to erect such an institution at the

time it was presented before the Legislature in Springfield for passage. After its passage it was not deemed advisable, by its promoters, to make the change from Sanitarium to Sanatorium—owing to the fact that the change might affect the bill as it stood. Another word is—tubercular and tuberculous—the former appears seven times. If this word refers to an individual who is suffering from tuberculosis then the word is wrongfully applied and in its place the adjective "tuberculous" should be used.

2370 S. W. 23 Terrace

JOHN RITTER, M.D.

INTERNATIONAL ASSEMBLY OF THE INTER-STATE POST-GRADUATE MEDICAL ASSOCIATION OF NORTH AMERICA

CLEVELAND, OHIO.

OCTOBER 16, 17, 19 AND 20, 1933

Monday, October 16, 8 A. M.

Diagnostic Clinic: "Gastric and Duodenal Ulcer,"

Dr. Waltman Walters, Associate Professor of Surgery, University of Minnesota Graduate School of Medicine, Mayo Clinic, Rochester, Minn.

Diagnostic Clinic: "Jaundice,"

Dr. Harlow Brooks, Emeritus Professor of Clinical Medicine, New York University and Bellevue Hospital Medical College, and Attending Physician, Fourth Medical Service, Bellevue Hospital, New York, N. Y.

Diagnostic Clinic: "Vesical Calculi,"

Dr. Hugh H. Young, Clinical Professor of Urology, Johns Hopkins University School of Medicine, Baltimore, Md.

Intermission, for Review of Exhibits

Diagnostic Clinic: (Subject to be announced),

Dr. Charles H. Frazier, John Rhea Barton Professor of Surgery, University of Pennsylvania School of Medicine, Philadelphia, Pa.

Diagnostic Clinic: "Colitis,"

Dr. James H. Means, Jackson Professor of Clinical Medicine, Harvard University Medical School, and Chief of the Medical Services, Massachusetts General Hospital, Boston, Mass.

Diagnostic Clinic: "Extra-Abdominal Conditions Simulating Intra-Abdominal Lesions,"

Dr. John M. T. Finney, Professor of Clinical Surgery, Johns Hopkins University School of Medicine, Baltimore, Md.

Noon Intermission

1:00 P.M.

Diagnostic Clinic: "Rickets,"

Dr. Alan Brown, Professor, Diseases of Children, University of Toronto Faculty of Medicine, and Physician-in-Chief, Hospital for Sick Children, Toronto, Canada.

Address: "Acute Rheumatic Fever,"

Dr. Harlow Brooks, New York, N. Y.

Address: "Cancer of the Stomach,"

Dr. Waltman Walters, Rochester, Minn.

Address: "Malignant Tumors of the Bladder,"

Dr. Hugh H. Young, Baltimore, Md.

Intermission for Review of Exhibits

Address: "Blood Dyscrasias Including the Schilling Count with Special Reference to the Specialties in Medicine,"

Dr. William Egbert Robertson, Visiting Chief, Department of Medicine, Philadelphia General Hospital, Philadelphia, Pa.

Address: "Surgery of the Pituitary Body,"

Dr. Charles H. Frazier, Philadelphia, Pa.

Address: "Relation of the Endocrine Glands to Circulatory Diseases,"

Dr. James H. Means, Boston, Mass.

Address: "Hernia,"

Dr. John M. T. Finney, Baltimore, Md.

Dinner Intermission

7:00 P.M.

Address: "Prevention of Neonatal Mortality,"

Dr. Alan Brown, Toronto, Canada.

Address: "Diagnosis of Brain Tumors,"

Dr. Walter E. Dandy, Adjunct Professor of Neurological Surgery, Johns Hopkins University School of Medicine, Baltimore, Md.

Address: "The Choice of Anesthetic Methods,"

Dr. Arthur Dean Bevan, Chairman of the Department of Surgery, Rush Medical College of the University of Chicago, Chicago, Ill.

Address: "The Periodic Health Examination,"

Dr. Charles A. Elliott, Professor of Medicine, Northwestern University School of Medicine, Chicago, Illinois.

Address: "Cancer of the Colon,"

Dr. Fred W. Rankin, Lexington, Ky.

Tuesday, October 17, 8 A. M.

Diagnostic Clinic: "Diseases of the Gall-Bladder,"

Dr. E. Starr Judd, Professor of Surgery, University of Minnesota Graduate School of Medicine, Mayo Clinic, Rochester, Minn.

Diagnostic Clinic: "Cirrhosis of the Liver,"

Dr. Cyrus C. Sturgis, Professor of Internal Medicine; Director, Thomas Henry Simpson Memorial Institute for Medical Research, University of Michigan, Ann Arbor, Michigan.

Diagnostic Clinic: "Menorrhagia and Metrorrhagia,"

Dr. P. Brooke Bland, Professor of Obstetrics, Jefferson Medical College of Philadelphia, Philadelphia, Pa.

Intermission for Review of Exhibits

Diagnostic Clinic: "Coronary Thrombosis and Angina Pectoris,"

Dr. R. W. Scott, Professor of Clinical Medicine, Western Reserve University School of Medicine, Cleveland, Ohio.

Diagnostic Clinic: "Tuberculosis of the Urinary Tract,"

Dr. Hugh Cabot, Prof. of Surgery, Graduate School of Medicine, Mayo Clinic, Rochester, Minn.

Diagnostic Clinic: "Suppurative Diseases of the Chest,"

Dr. George P. Muller, Professor of Clinical Surgery, Graduate School of Medicine, University of Pennsylvania; Surgeon, Lankenau and Misericordia Hospitals, Philadelphia, Pa.

Noon Intermission

1:00 P.M.

Diagnostic Clinic: "Metabolism in Pregnancy,"

Dr. Otto H. Schwarz, Professor of Obstetrics and Gynecology, Washington University School of Medicine, St. Louis, Mo.

Address: "Megacolon,"

Dr. E. Starr Judd, Rochester, Minn.

Address: "Differential Diagnosis and Treatment of Anemia,"

Dr. Cyrus C. Sturgis, Ann Arbor, Mich.

Address: "Cancer of the Uterus,"

Dr. P. Brooke Bland, Philadelphia, Pa.

Intermission for Review of Exhibits

Address: "Clinical Aspects of Arteriosclerosis,"

Dr. R. W. Scott, Cleveland, Ohio.

Address: "Management of Bilateral and Recurrent Ureteral and Kidney Stones,"

Dr. Hugh Cabot, Rochester, Minn.

Address: "Appendicitis,"

Dr. George P. Muller, Philadelphia, Pa.

Address: "Chronic Subinvolution, Its Pathology, Treatment and Prevention,"

Dr. Otto H. Schwarz, St. Louis, Mo.

Dinner Intermission

7:00 P.M.

Address: "Recent Advances in the Knowledge of Endocrine Diseases,"

Dr. Leonard G. Rowntree, Director of the Philadelphia Institute for Medical Research; Research Clinician to the Philadelphia General Hospital, Philadelphia, Pa.

Address: "Diagnosis and Treatment of Bronchiectasis,"

Dr. Arthur C. Christie, Professor of Roentgenology, George Washington University Medical School, Washington, D. C.

Address: "Cancer of the Larynx,"

Dr. Gordon B. New, Professor of Oto-Rhino-Laryngology, University of Minnesota, Graduate School of Medicine, Mayo Clinic, Rochester, Minn.

Address: "The Association of Eye Changes with General Diseases,"

(Speaker to be Selected)

Wednesday, October 18, 8 A. M.

Diagnostic Clinic: "Diseases of the Spleen—Leukemia,"

Dr. Warfield T. Longcope, Professor of Medicine, Johns Hopkins University School of Medicine, Baltimore, Md.

Diagnostic Clinic: "Inoperable and Recurrent Carcinoma of the Breast,"

Dr. Burton J. Lee, Professor of Clinical Surgery, Cornell University Medical College; and Clinical Director of Memorial Hospital, New York, N. Y.

Diagnostic Clinic: "Medical Conditions Simulating Surgical Conditions of the Upper Abdomen,"

Dr. Frederick J. Kalteyer, Clinical Professor of Medicine, Jefferson Medical College of Philadelphia, Philadelphia, Pa.

Intermission for Review of Exhibits

Diagnostic Clinic: "Nephritis in Children,"

Dr. W. McKim Marriott, Professor of Pediatrics and Dean, Washington University School of Medicine, St. Louis, Mo.

Diagnostic Clinic: "Gall-Stones and Cholecystitis,"

Dr. Frank H. Lahey, Lahey Clinic, Boston, Mass.

Diagnostic Clinic: "Tic Douloureux,"

Dr. Howard C. Naffziger, Professor of Surgery, University of California Medical School, San Francisco, Calif.

Noon Intermission

1:00 P. M.

Diagnostic Clinic: "Ileus,"

Dr. Irvin Abell, Clinical Professor of Surgery, University of Louisville School of Medicine, Louisville, Ky.

Address: "Allergic Diseases,"

Dr. Warfield T. Longcope, Baltimore, Md.

Address: "Drug, Neurotic and Self-Induced Eruptions" (Lantern Slide Demonstration),

Dr. Frank C. Knowles, Professor of Dermatology, Jefferson Medical College of Philadelphia, Philadelphia, Pa.

Address: "Surgical Treatment of Angina Pectoris,"

Dr. Elliott C. Cutler, Moseley Professor of Surgery, Harvard University Medical School, Boston, Mass.

Intermission for Review of Exhibits

Address: "Differential Diagnosis of Gall-Bladder Diseases from the Roentgenological Standpoint,"

Dr. Bernard H. Nichols, Head of the Department of Radiology, Cleveland Clinic, Cleveland, Ohio.

Address: "Sweat Gland Carcinoma of the Breast,"

Dr. Burton J. Lee, New York, N. Y.

Address: "The Diagnostic Value of the Respiratory Rate as a Sign in Differentiating Acute Pulmonary Disease from Acute Abdominal Disease,"

Dr. Frederick J. Kalteyer, Philadelphia, Pa.

Address: "Regeneration of the Liver,"

Dr. Charles H. Mayo, Associate Chief of Staff of the Mayo Clinic, Rochester, Minn.; Professor of Surgery, Medical School, University of Minnesota; Professor of Surgery, Graduate School, University of Minnesota (The Mayo Foundation).

Dinner Intermission

7:00 P. M.

Address: "Special Points in the Feeding of Children with Special Relation to Dentition and Growth,"

Dr. W. McKim Marriott, St. Louis, Mo.

Address: "Intrathoracic Goiter,"

Dr. Frank H. Lahey, Boston, Mass.

Address: "The Diagnosis of Spinal Cord Tumors,"

Dr. Howard C. Naffziger, San Francisco, Calif.

Address: "Preoperative and Postoperative Management in Abdominal Surgery,"

Dr. Irvin Abell, Louisville, Ky.

Address: "Problems of Cardiac Failure,"

Dr. Joseph T. Wearn, Professor of Medicine, Western Reserve University School of Medicine, Cleveland, Ohio.

Thursday, October 19, 8 A. M.

Diagnostic Clinic: "Psychoses of Different Age Periods,"

Dr. Louis J. Karnosh, Assistant Clinical Professor of Nervous Diseases, Western Reserve University School of Medicine, Cleveland, Ohio.

Diagnostic Clinic: (Subject to be announced),

Dr. Dean D. Lewis, Professor of Surgery, Johns Hopkins University School of Medicine, Baltimore, Md.

Diagnostic Clinic: "Knee Joint Injuries,"

Dr. John J. Moorhead, Professor of Traumatic Surgery, New York Postgraduate Medical School, Columbia University, New York, N. Y.

Intermission for Review of Exhibits

Diagnostic Clinic: "Complications of Pregnancy,"

Dr. William B. Hendry, Professor of Obstetrics and Gynecology, University of Toronto Faculty of Medicine, Toronto, Canada.

Diagnostic Clinic: "Laryngitis,"

Dr. Fielding O. Lewis, Professor of Laryngology, Jefferson Medical College of Philadelphia, Philadelphia, Pa.

Diagnostic Clinic: "Differential Diagnosis Between Ulcer of the Stomach and Duodenum and Gall-Stones,"

Dr. William D. Haggard, Professor of Clinical Surgery, Vanderbilt University School of Medicine, Nashville, Tenn.

Noon Intermission

1:00 P.M.

Address: "The Prognosis and Treatment of the Angular Syndrome,"

Dr. Elsworth S. Smith, Professor Emeritus of Clinical Medicine, Washington University School of Medicine, St. Louis, Mo.

Address: (Subject to be announced),

Dr. Dean D. Lewis, Baltimore, Md.

Address: "Newer Concepts of Methods of Procedure in the Management of Infections of the Gastro-Urinary Tract,"

Dr. Joseph F. McCarthy, Director and Professor, Department of Urology, New York Postgraduate Medical School, Columbia University, New York, N. Y.

Address: "Treatment of Fractures,"

Dr. John J. Moorhead, New York, N. Y.

Intermission for Review of Exhibits

Address: "Problems of Hemorrhage in Obstetric Practice,"

Dr. William B. Hendry, Toronto, Canada.

Address: "Relation of Tonsils to Systemic Infection,"

Dr. Fielding O. Lewis, Philadelphia, Pa.
Address: "The Recognition of Affective Disorders and their Management,"

Dr. Louis J. Karnosh, Cleveland, Ohio.
Address: "The Surgery of Congenital and Acquired Ear Deformities,"

Dr. George V. I. Brown, Professor of Plastic Surgery, University of Wisconsin Medical School, Milwaukee, Wisconsin.

Dinner Intermission
7:00 P.M.

Address: "Lobectomy for Chronic Non-Tuberculous Suppurative Bronchiectasis,"

Dr. Edward E. Archibald, Professor of Surgery and Director of the Department, McGill University Faculty of Medicine, Montreal, Canada.

Address: "The Diagnosis of Pulmonary Diseases,"
Dr. Willis F. Manges, Professor of Roentgenology, Jefferson Medical College of Philadelphia, Philadelphia, Pa.

Address: (Subject to be announced),
Dr. John R. Fraser, Professor of Obstetrics and Gynecology, McGill University Faculty of Medicine, Montreal, Canada.

Address: "The Prevention of Heart Disease in Children,"

Dr. Edward L. Bauer, Professor of Diseases of Children, Jefferson Medical College of Philadelphia, Philadelphia, Pa.

Friday, October 20, 8 A.M.

Diagnostic Clinic: "Diseases of Civilization,"

Dr. George Crile, Cleveland Clinic, Cleveland, Ohio.

Diagnostic Clinic: "Diabetes in Children,"

Dr. Elliott P. Joslin, Clinical Professor of Medicine, Harvard University Medical School, Boston, Mass., and,

Dr. Priscilla White, Physician, New England Deaconess Hospital, Boston, Mass.

Diagnostic Clinic: "Pernicious Anemia,"

Dr. Lewellys F. Barker, Professor Emeritus of Medicine, Johns Hopkins University School of Medicine, Baltimore, Md.

Intermission for Review of Exhibits

Diagnostic Clinic: "Nephritis in Adults,"

Dr. Henry A. Christian, Hersey Professor of the Theory and Practice of Physic, Harvard University Medical School, and Physician-in-Chief, Peter Bent Brigham Hospital, Boston, Mass.

Diagnostic Clinic: "Carcinoma of the Large Intestine and Rectum,"

Dr. John F. Erdmann, Professor of Surgery, Columbia University; Director of Surgery, Post-Graduate Hospital of Columbia University, New York, N. Y.

Diagnostic Clinic: "Transplantation of the Ureters,"

Dr. William E. Lower, Cleveland Clinic, Cleveland, Ohio.

Noon Intermission
1:00 P.M.

Address: "Surgical Management of Diseases of the Gall-Bladder and Ducts,"

Dr. George Crile, Cleveland, Ohio.

Address: "Diabetes Associated with Hyperthyroidism and with Tuberculosis,"

Dr. Elliott P. Joslin, Boston, Mass.

Address: (Subject to be announced),
Dr. William J. Mayo, Chief of Staff, Mayo Clinic, Rochester, Minn.; President, Inter-State Post-Graduate Medical Association.

Address: "Obesity—Its Forms and Treatment,"

Dr. Lewellys F. Barker, Baltimore, Md.

Address: "Types of Edema and their Treatment,"

Dr. Henry A. Christian, Boston, Mass.

Address: "Management of Acute Abdominal Conditions,"

Dr. John F. Erdmann, New York, N. Y.

Address: "Gastro-Intestinal Disturbances Associated with Diseases of the Upper-Urinary Tract,"

Dr. William E. Lower, Cleveland, Ohio.

Evening
Assembly Dinner
Informal

Saturday, October 21

Post-Assembly Clinics in charge of the staffs of Cleveland Hospitals.

ANNUAL MEETING OF THE ILLINOIS
TUBERCULOSIS ASSOCIATION

The Annual Meeting of the Illinois Tuberculosis Association will be held at the Parkside Hotel, Kewanee, on September 18 and 19, 1933. Every member of the Illinois State Medical Society is cordially invited to be present at this meeting and participate in the discussion of the papers to be presented.

PROGRAM

Monday, September 18.

9.00—10.00. Registration.

10.00—11.00. Annual business meeting: Dr. E. S. Murphy, Dixon, Illinois, President of the Illinois Tuberculosis Association, presiding.

11.00—12.00. Meeting of the Board of Directors.

12.00 Special luncheon, Dr. H. N. Heflin, Kewanee, presiding. Speaker, Dr. Stuart Pritchard, President, National Tuberculosis Association, Battle Creek, Michigan. "The Scientific Background of Tuberculosis Work."

2.00. "Tuberculosis Control." Dr. M. Pollak, Peoria. (Followed by ten minute discussion.)

2.30. "Sanatorium Problems in Illinois." Dr. Robinson Bosworth, Rockford. (Followed by fifteen minute discussion.)

3.15. "Some of the Advancements in the Technique of Early Diagnosis of Pulmonary Tuberculosis." Dr. D. O. N. Lindberg, Decatur. (Followed by ten minute discussion.)

3.45. "Renal Tuberculosis." Dr. Baxter Brown, Peoria. (Open discussion.)

4.15. "Broadening Tuberculosis Programs." Dr. Arlington Ailes, La Salle. (Followed by ten minute discussion.)

4.45. "Indications for Collapse Therapy." Dr. A. T. Leipold, Rock Island.

6.30. 24th ANNUAL BANQUET. Dr. E. B. Cooley, Danville, Toastmaster.

1.—"Some of the Achievements in the Scientific Treatment of Tuberculosis Since the Discovery of the Tubercle Bacillus." Dr. E. S. Murphy, President, Illinois Tuberculosis Association, Dixon.

2.—"Subject to be Announced." Dr. Philip H. Kreuscher, President, Illinois State Medical Society, Chicago.

3.—"Subject to be Announced." Dr. Frank J. Jirka, Director, Illinois Department of Public Health, Springfield.

4.—"Problems in the Field of Work with Handicapped Children, with Special Reference to Tuberculosis Handicaps." (Illustrated.) Dr. Stuart Pritchard, President, National Tuberculosis Association, Battle Creek, Michigan.

Tuesday, September 19.

9.00. "Necessary Qualifications and Training for Public Health Nurses." Miss Mabel Dunlap, R. N., Director, Moline Public Health Nursing Service, Moline.

9.30. "Problems to be Solved in a Rural Tuberculosis Nursing Program." Miss Ruth Kirk, R. N., Whiteside County Nurse, Sterling.

10.00. "Necessity of Tuberculosis Case Reporting." Dr. D. D. Monroe, Superintendent, Madison County Sanitarium, Edwardsville. Discussion opened by Dr. Harold M. Camp, Monmouth.

10.30. "The Work of the Illinois State Medical Society in the Field of Health Education." Dr. Harold M. Camp, Secretary, Illinois State Medical Society, Monmouth.

11.00. "Tuberculosis Terminology." Dr. Inas P. Rice, Superintendent, Springbrook Sanitarium, Aurora.

11.30. "Educational Publicity." Mr. Charles A. Freck.

12.30. Special Luncheon. At this luncheon the Annual Business Meeting of the Illinois Conference of Tuberculosis workers will be conducted. Following that, there will be a paper by W. P. Shahan, Executive Secretary of the Illinois State Tuberculosis Association, on "Problems Often Confronting Voluntary Educational Organizations."

2.00. Informal round table discussion on County Association Problems.

ASSOCIATION OF MILITARY SURGEONS OF THE UNITED STATES

FORTY-FIRST ANNUAL CONVENTION

CONGRESS HOTEL—CHICAGO

September 25-26-27, 1933.

Monday 9-25-33

9:30 A. M.

BUSINESS SESSION—Florentine Room
SCIENTIFIC SESSION

The new Concept of Training for Medical Department Reserves. Discussion.

"Additional Medical Department Officer Procurement in the National Guard for a Major Emergency."

12:00 N.

NICHOLAS SENN LUNCHEON

GUESTS OF HONOR

SPEAKERS

1:30 P. M.

TRANSPORTATION (Buses)
Congress St. Hotel entrance to Illinois
Naval Reserves Armory foot of Randolph
Street.

2:00 P. M.

U. S. S. "Wilmette"

CHICAGO SKY LINE BOATRIDE

4:00 P. M.

A CENTURY OF PROGRESS
Sight-seeing as you will.

6:00 P. M.

GROUP DINNERS
Century Club, Belgian Rathskeller, Heidelberg, Italian Cafe, Fish Bar, Czechoslovakia Restaurant, Pabst Blue Ribbon, Ann Rutledge Inn, etc.

8:00 P. M.

SMOKER—Illinois Host House

THE ALLENBY CAMPAIGN IN
PALESTINE

Official moving pictures taken by British, German and Turkish Signal Corps will be shown.

Pres. R.C. Williams, Asst. Surg. Gen. P.H.S.

Lt. Col. W. Lee Hart, M. C. Asst. to the
Corps Area Surgeon, Omaha, Nebraska.

Col. David C. Hilton, M. C. Neb. N. G.

Col. Gilbert FitzPatrick, Med. Res.

Chairman.

Dr. Emanuel J. Senn

Dr. William N. Senn

Col. Franklin H. Martin, Med. Aux.

Maj. W. A. Evans, Med. Aux. Ill. N. G.

Lt. John Ferrin, Med. Res. Chairman

Capt. Ed. A. Evers, U. S. N. R. Comdr.

4th Naval Area

Lt. Com. Overton Brooks, M. C.-F.

U. S. N. R. Chairman

Maj. L. E. Garrison, M. C. Ill. N. G.
Chairman

Lt. Col. C. C. MacLane, Med. Res.
Chairman

Col. Edward Davis—65th Cav.

2nd Day

Tuesday 9-26-33

9:30 A. M.	TRANSPORTATION (Buses) Congress St. Hotel Entrance to A Century of Progress.	Capt. Carl Steinhoff, Med. Res. Chairman
10:00 A. M.	HALL OF SCIENCE—South Hall Doctor Carey will give a fifteen minute illustrated description of the exhibits which will then be visited in groups. Trained conductors are provided for each group and Representatives from the Universities preparing the special demonstrations for the occasion will expound the same.	Dr. Even J. Carey, Chairman Director Medical Section, Basic Science Division, A Century of Progress.
12:30 P. M.	LUNCHEON Hall of Science—Trustees Lounge Presentation of Colors Music Addresses of Welcome Responses Foreign Delegates— Introduction Foreign Delegates Decorations Announcement of Winner RECEPTION	Col. Gilbert FitzPatrick, Med. Res. Pres. R. C. Williams, Asst. Surg. Gen. P.H.S. Chairmen Troops from Camp Whistler 3rd F. A. Band Hon. Ed. J. Kelly, Mayor of Chicago Hon. Rufus C. Dawes, President, A Century of Progress Rear Admiral Wat T. Cluverius, Comm., Great Lakes Naval Training Station Maj. Gen. Frank Parker, Comm. 2nd Army Maj. Gen. Roy D. Keehn, Comm. 33rd Div. Pres. R. C. Williams Maj. Edgar A. Hume, M. C. Librarian, The Surgeon General's Library Pres. R. C. Williams Henry S. Wellcome Prize Essay 1933. Col. A. E. Lord, M. C. Ill. N. G. Chairman
2:30 P. M.	A CENTURY OF PROGRESS Sight-seeing as you will	
	3rd Day	
9:30 A. M.	BUSINESS SESSION (Florentine Room)	Pres. R. C. Williams, Asst. Surg. Gen. P.H.S.
12:00 N.	ADJOURN SINE DIE	

"The Medical Profession at large is invited to attend the Luncheon and participate in any and all functions of the Association."

AUXILIARY NOTES

COOK COUNTY

The following officers were elected at the annual meeting of the Woman's Auxiliary to the Cook County Medical Society held at the Stevens Hotel, Chicago, Wednesday, May 26:

President—Mrs. Lucius Cole.

President-Elect—Mrs. John A. Wolfer.

Vice-President—Mrs. F. P. Hammond.

Past President—Mrs. A. H. Brumback.

Recording Secretary—Mrs. C. A. Hedberg.

Corresponding Secretary—Mrs. Meyer Solomon.

Treasurer—Mrs. William Raim.

The business meeting was followed by a program.

The first Board meeting for the year will be held Wednesday, September 6, and the first open meeting is scheduled for Wednesday, October 6.

All doctors' wives are invited to attend this first open meeting and a special invitation is extended to out-of-town guests.

A CENTURY OF PROGRESS

In accordance with the plan announced in the April number of the ILLINOIS MEDICAL JOURNAL, The Woman's Auxiliary to The Chicago Medical Society is cooperating with The Chicago Medical Society at its booth in the Hall of Science at A Century of Progress Exposition. Mrs. A. H. Brumback, Mrs. Lucius Cole, and the Presidents of the organized branches have this work in

charge. The members of the five branches in Chicago, Aux Plaines, Englewood, Jackson Park, North Shore and North Side—are hostesses at the booth. The enthusiasm of the members of the Chicago Auxiliary for this undertaking is indicated by the fact that a volunteer hostess has been in attendance at the booth each day since the opening of the Exposition. They have met auxiliary members, physicians' wives, and other visitors who have entered the booth or have shown interest in the exhibit. A card index is kept, and physicians' wives are invited to register. Up to August 15 more than 350 auxiliary members and physicians' wives had registered. About one-half of them were from Illinois, the remainder from 43 other states. From other countries the following guests have registered: Donata G. Alarcon, Tampico, Mexico; Mrs. Angus A. McLean, London, Canada; Dr. Isabel Reyes, Mexico City, Mexico; Mrs. Annabel Banks, Alberta, Canada; Mrs. L. Gyori, Havana, Cuba; Mrs. G. Yosi, Havana, Cuba; and Mrs. W. G. Thurston, Maitlack, Saskatchewan, Canada; Mrs. Marcela L. deKabaydo, Box 47, Cadiz Occ Negros, Philippine Islands. The names of those who have registered are being published each week in the Bulletin of the Chicago Medical Society.

Visitors who enter the booth are told that they are the guests of the Chicago Medical Society and of the Woman's Auxiliary, and that they are welcome to rest in the comfortable chairs and settees. (These were provided by the Woman's Auxiliary.) The guests are invited to read the panels showing a Century of Medical Progress in Chicago, and the organization of The Chicago Medical Society.

Visitors to the booth have expressed enthusiasm for this artistic and instructive exhibit, and appreciation for the courtesies shown them by the hostesses. The hostesses also furnish information to physicians' wives concerning the Fair, the City of Chicago, and the Woman's Auxiliary.

In this work it has been the primary purpose of the Auxiliary to be of assistance to the wives of physicians visiting the Exposition. The hostesses also have had constantly in mind the chief objects of the Auxiliary—to assist the medical profession, and to disseminate knowledge concerning the aims and educational program of organized medicine.

The booth is located on the north ramp just inside the West entrance to the Hall of Science, near Eighteenth Street. The Woman's Auxiliary to the Chicago Medical Society extends a cordial invitation to all members of the State Auxiliary and to the wives of physicians and their friends to visit the booth of The Chicago Medical Society while attending the Exposition.

Through the courtesy of Miss McArthur a map of Illinois, showing the location of the County Auxiliaries has been placed in the office of the Educational Department.

NATIONAL CONVENTION MILWAUKEE

Dear Fellow Members:

Not nearly all of us managed to attend the National Convention, held this year at Milwaukee, but those of us who did, came away with our hearts warmed by

the friendliness of our reception, our heads filled with new ideas, and our spirits buoyant with the report of work accomplished throughout the States by our organization.

To satisfy our social instincts there were luncheons and bridge and teas, dinners, dancing, and last but not least to many, I'm sure, golf. The teas, given in the gardens of private homes, and a tour of the especially lovely gardens, arranged through the auspices of the Garden Club of Milwaukee, were altogether soul-satisfying and, after the business meetings, a means of shedding all but the beautiful in fact or fancy.

Speaking of the business meetings, there was much of interest. It is amazing how the nation at large is responding to the needs pointed out through the American Medical Association, by the workers in Auxiliary, and gratifying to hear the American Medical Association officers acknowledge the help given and plan new and wider paths for us to develop. These lectures and talks by the doctors were a part of our sources of inspiration, of course, along with a brief history of the birth of the Auxiliary and its development through the power of "love and friendship."

Many great and beautiful tributes were paid to our late President, Mrs. Corinne Keen Freeman, whose life in recent years had been given almost completely to her work in the Auxiliary, and there were paeans of praise for Mrs. James F. Percy who took up her work and consummated it so successfully.

It is just too bad we could not all hear the reports of the State Presidents—to know what devotion is being given to the education of the laymen throughout the Union, and what strides are being made in having Medical Knowledge dispensed by medical men only. Medical facts are being instilled into teachers and students through essay contests, sponsored by Auxiliaries, the material for the essays to be gleaned from *Hygeia*. There are student loan funds, funds for philanthropy and benevolence, and of course, the regular and in some cases the extra-ordinary developments along the major lines of Legislation, Public Relations, Self-education, *Hygeia* and so on.

Texas, the first state to organize, has an \$800.00 Student Loan Fund—the proceeds from a book, "The Medicine Man in Texas," written and donated by Mrs. S. C. Red of Texas, first National President of the Woman's Auxiliary to the American Medical Association, which fund is destined to grow as it is an intimate history of the development of medicine in Southwestern United States. Another National President, Mrs. John O. McReynolds, also of Texas, has donated a fund for the relief of physicians' widows.

These are a few of the inspiring facts unfolded to us, and part of the reason for the enthusiasm we took away with us from this National Convention.

We were proud to feel that the next National President, Mrs. James Blake, was from a sister state, Minnesota, and that among the officers, our own state was represented by such charming women and able workers as Mrs. Rollo K. Packard, the new Second Vice-President; Mrs. G. Henry Mundt, Resolutions Chairman; Mrs. E. W. Mueller, Retiring State Presi-

dent; Mrs. Solomon Jones, incoming State President; Mrs. Lucius Cole, State President-Elect. Mrs. T. O. Freeman, our recent President, was kindly remembered. The National Board invited Mrs. A. H. Brumback to give a three minute talk on the Chicago Auxiliary Booth at A Century of Progress.

We were given the slogan—"Know Your Auxiliary" and admonished to read our County, State and National Bulletins.

This is but a spark I am passing along in the hope of intriguing your interest in our National Conventions. You really should not miss the "Reports of the States" each year. Do not fail to read the complete report and minutes of the Convention which are to be published and forwarded to each auxiliary in the fall.

Yours in interest,

Maude Wolfer

Mrs. John A. Wolfer, Recording Secretary

NUCLEI OF DISEASE IN THE AIR

We may esteem ourselves fortunate that the detection of non-radioactive substances is less sensitive than those that have been described. If we could see how many nuclei of dirt, dust, and disease are contained in the air we constantly inhale, we might be terrified and hardly dare to breathe. Nature in her wisdom has arranged matters so that in the course from the ponderable to the imponderable the limits of visibility coincide approximately with the limits of weighability. Let us be thankful that it does not reach down to the individual atoms.—Hahn, Otto: From the Ponderable to the Imponderable, *Science* 77:403 (April 28) 1933.

SOME ODD FACTS ON HAY FEVER

Hay fever, which annually brings sneezes and watery eyes to thousands, may be caused by substances ranging all the way from face powder to canary feathers, doctors assert.

The disease is usually caused by irritation of the mucous membrane of the eyes, nose and throat by tiny grains of plant pollen floating in the air.

The University of Maryland Hospital cites the case of a girl who suffered from hay fever the year around, instead of merely during the usual season.

It was discovered that she used a face powder made from orris root, a plant to which she was super-sensitive. Her symptoms disappeared after she changed to another powder with a different base.

Another woman who raised canaries and kept about 50 of them at home was found to be sensitive to canary feathers and promptly recovered from her attack of the malady after the birds were removed.

ECONOMICS

This is the critical hour. The doctors still have the opportunity for preventing outright socialization of medicine, by presenting a plan of their own for solving the problems of medical economics, whether by group practice, state subsidy, voluntary insurance or whatnot.

If the doctors resentfully lose this opportunity, a

plan for medical care will arise anyway. But it will come in the worst way. The doctors will have forced political control of the practice of medicine upon themselves, by fighting it without vision.—The Medical Bulletin, The Sedgwick County Medical Society, April, 1933.

Child health is a recognized part of Public Health work. Properly controlled and administered it is of great value to the public at large and to the profession.

It teaches the public that frequent and regular examinations of infants and children make for childhood and adult good health and will prevent loss of life.

If the profession at large is alert and will fit themselves to give service as good as that obtained at the infant and child health stations the paying public will seek the private doctor for individual service.—The Bulletin of the Los Angeles County Medical Association, May 4, 1933.

In a very entertaining special article in the State Medical Association Journal of February, 1932, Edward H. Ochsner of Chicago makes the following observations:

"It is a profound mystery why the people of the present generation should so violently run after the very things their forefathers so violently ran away from in 1776. One of the chief indictments of King George set forth in the Declaration of Independence reads: 'He has erected a multitude of new offices and sent hither swarms of officers to harass our people and eat out their substance.'—Thirty years ago one person in every forty-five was in government employ while now one in every twelve is so employed.

"IF A NATION DOES NOT EDUCATE ITS CITIZENS TO INDIVIDUAL RESPONSIBILITY IT WILL SOON HAVE NO ONE CAPABLE OF ASSUMING PUBLIC RESPONSIBILITY."—Exchange.

EARLY TO BED AND EARLY TO RISE

Early to bed and early to rise does very well with preachers and guys, but makes a man miss all the fun till he dies, and joins the stiff that are up in the skies. Go to bed when you please, and lie at your ease, and you'll die just the same from a Latin disease.—Gillard's Medical Journal.

In the passing of the Preceptorial System the medical student lost much of the personal touch with patient and teacher, which so richly endowed the "doctor" of other days with those paternal attributes which made him the father-confessor and friend-at-large to prince, pauper, poet and priest.

'Twere difficult to visualize "Dr. Weelum MacClure" pushing his bulky frame into the crowded elevator car of a modern sky-scraper college; to see on the twentieth floor a cinematographic reproduction of karyokinesis. He lacked much in scientific knowledge as his modern descendant knows it, but his affluence in the knowledge of the human heart made him *frater* to all. Alas, that he has gone!

Original Articles

THE DIAGNOSIS OF CHRONIC ARTHRITIS*

DOUGLAS BOYD, M. D.

Clinical Assistant, Northwestern University Medical School
HIGHLAND PARK, ILLINOIS

No classification of chronic arthritis is universally satisfactory but we have followed that popularized by Cecil,¹ and feel that this grouping has been of definite aid in clarifying the fundamental clinical differences. It is highly important to know which form of arthritis we are dealing with in order to give an intelligent

CHART 1 — CLASSIFICATION OF ARTHRITIS*

I. INFECTIOUS	a. Rheumatic fever b. Rheumatoid or infectious arthritis c. Arthritis caused by specific organisms
II. DEGENERATIVE HYPERTROPHIC	Osteoarthritis
III. ALLERGIC	Serum sickness
IV. TRAUMATIC	
V. METABOLIC	a. Gout b. Scurvy c. Rickets
VI. NEUROGENIC ARTHROPATHY	Including Charcot joints, Syringomyelic and Post Hemiplegic.

*From Cecil, R. L., Rheumatoid Arthritis, J. A. M. A., C:1220, April 22, 1933

*Read before Section on Medicine of the Illinois State Medical Society, Peoria, May 16, 1933. (Symposium on Arthritis.)

prognosis and to plan a reasonable course of treatment.

This terminology defines two main groups: 1. Chronic infectious arthritis, in which we place atrophic arthritis as a special type, and 2. Degenerative or hypertrophic arthritis.¹ The second is by far the larger group as seen in the Arthritic Clinic of Northwestern University Medical School. This grouping has value, we feel, because it emphasizes the distinction between the infectious and the noninfectious forms. This distinction is justified from both the clinical and the experimental background. Clinically, the atrophic form of the infectious group behaves very differently from the majority of its group. It occurs most frequently in women of a definite constitutional makeup; the young, thin, fair skinned, flat chested, anemic and chronically fatigued. Characteristically it is most stubborn to treat, ordinarily showing a steady and progressive course to invalidism. In the degenerative or hypertrophic group we have felt that the process is essentially a degenerative change. It has been seen so frequently with associated evidences of age—arteriosclerosis, myocarditis and senile changes.

These two major groups present major differences, which are best clearly presented in the following Figure 2, adopted from Cecil¹ and Dawson et al.³

In Chart 2, most of the differential points are

CHART 2—DIFFERENTIAL POINTS IN DIAGNOSIS OF CHRONIC ARTHRITIS

	INFECTIOUS ARTHRITIS	HYPERTROPHIC ARTHRITIS
Past History	Frequently Tonsillitis, Sinusitis	Not characteristic.
Age Onset	Over 80% between 20 - 50 years.	Most frequently 40 - 55
Focus Infection	Usually present	Usually absent
Weight	Undernourished	Well nourished
Blood	Frequently low Hemoglobin, Leukocytosis	Normal Hemoglobin, no leukocytosis
Joint Involvement	Symmetrical — Generalized	Less generalized, chiefly larger joints, knees, back
Morbid Anatomy (Bone)	Rarefaction	Condensation
Appearance Joints	Early: Periarticular swelling, fusiform fingers Late: Ankylosis, extreme deformity	Early: Slight articular enlargement. Late: More pronounced enlargement, incomplete ankylosis, Heberden's nodes.
Subcutaneous Nodes	Present in 15 - 20%	Not present
Sedimentation Rate	Usually greatly increased, average 43 mm.	Normal or slightly increased
Roentgen Findings	Early: Periarticular swelling, slight narrowing of joint Late: Osteoporosis, bone destruction with new bone formation; ankylosis and deformities N.B. This applies to the Atrophic type. In the larger percentage the simple infectious type shows only periarticular pathology.	Early: Slight lipping at joint margins Late: Marked lipping, osteophyte formation, and hyperostosis

"Diagnosis of Chronic Arthritis," Douglas Boyd, M.D.

clearly indicated. I would like to emphasize certain factors in the table.

In the infectious group an assiduous search should be made for foci of infection. The gastro-intestinal tract frequently acts such a role in cholecystitis, appendicitis, and at times in obstinate constipation. This important fact may be overlooked.

Changes in the blood picture depend somewhat on the stage of the disease and are important in the infectious type. Early patients frequently show a leucocytosis without an anemia. Later anemia develops and the leucocytosis disappears. The anemia is particularly apt to be prominent in that type we call atrophic arthritis.

Blood chemistry studies have not proved helpful to us. In one group of 134 patients studied a few years ago, the sugar tolerance test was normal in 96.3%. This indicated to us that the carbohydrate utilization in arthritics as a group was not disturbed. Blood sugar examinations gave 100% normal values in our clinic. Blood nitrogen values were 84% normal in a recent group and as many of these patients were beyond the fourth decade, we did not feel this a significant variation. Blood uric acid determinations gave a more significant variation from the expected. This was due to the incident of gout. More uric acid determinations were done because this condition was suspected.

CHART 3 — BLOOD CHEMISTRY IN CHRONIC ARTHRITIS

Test	No. Determinations	% Normal
Blood Sugar.....	76	100
Sugar Tolerance.....	134	96.3
Non-Protein Nitrogen.....	72	84
Urea Nitrogen.....	73	84
Uric Acid.....	82	71

Roentgenograms should be confined to the doubtful cases and to those patients in whom it is vital to determine the extent of joint damage in defining treatment. Routine roentgenograms are unnecessary. When they are used, it is essential that definitive films in two planes be obtained, and this is particularly necessary for the spine. We have found roentgenograms most helpful in clarifying the diagnosis of spinal arthritis, and in differentiating this from spinal injuries and abnormalities.

The sedimentation rate of the erythrocytes has been of considerable value in determining

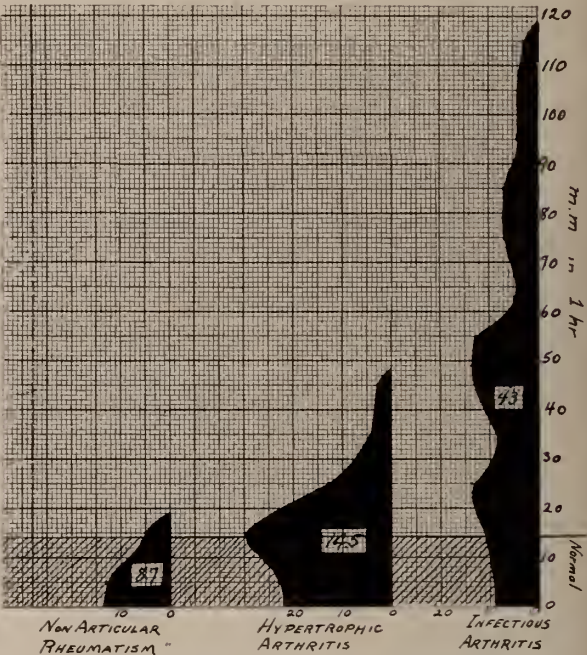


Fig. 1. Sedimentation rates in different types of arthritis.

the activity of the infection present and in differentiating the two types of arthritis in some clinics.² We have used this method little. In infectious arthritis, the sedimentation rate parallels to an extraordinary degree the severity and extent of the arthritic process. In infectious arthritis, the rate was often greatly increased, often exceeding 30 millimeters in one hour, where in the degenerative arthritis the rate was usually normal and rarely exceeded 30 millimeters in one hour. Kahlmeter³ also found the sedimentation rate a useful guide in the differential diagnosis.

Study of the basal metabolic rate has not given us much aid in the study of arthritis. In the last 140 determinations, we found only 12% below minus 15 and only 4% above plus 15, a variation we do not feel is of significance for the group. An occasional patient (seven) was found with a metabolism rate below minus 20%, a very significant value for the individual patient, if constant. One will see myxedema in a large arthritic clinic, as one sees other pathological conditions. Patients may easily be selected for metabolism study, but we do not feel such tests need be done very frequently.

DIFFERENTIATION FROM OTHER PATHOLOGICAL CONDITIONS

As patients appear in the clinic, we have found several conditions which cause confusion in the

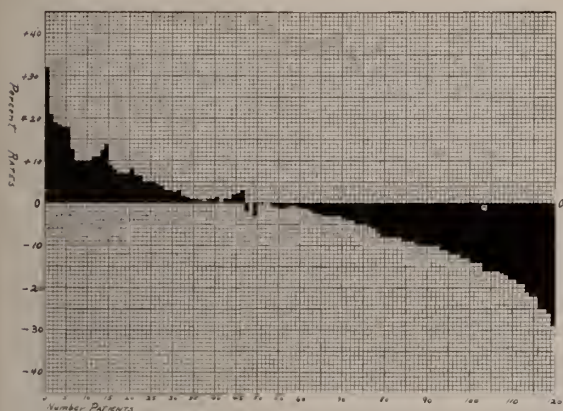


Fig. 2. Basal metabolism rates in arthritis.

diagnosis. Frequently we have found static abnormalities, poor body mechanics, a cause of confusion. Here, we group those with flat feet, poor posture, and deformities due to trauma. It is true that these difficulties, if borne for years, will produce arthritis in neighboring joints, particularly where weight bearing joints are involved. But earlier they may be separated from an arthritic class and treated more effectively by mechanical corrective measures. Developmental defects of the spine are best defined by roentgenograms and are most helped by orthopedic measures.

Certain vascular diseases may give confusing symptoms. The leg pains of advanced arteriosclerosis, of thromboangitis, and varicose veins bring patients to the arthritic clinic. Each condition may be readily recognized by suitable local examination.

At times the girdle pains and the leg pains of late syphilis may raise a diagnosis question, but proper histories and serological examinations will usually clarify the clinical picture.

Gout still occurs, and should be considered a separate disease entity. The following criteria, emphasized by Cecil, and by Hench⁴ will ordinarily clear any confusion:

a. History of onset with acute pain in the great toe.

b. The intermittent nature of the acute and subacute attacks, frequently associated with complete joint remissions.

c. Occurrence of gouty tophi in ears or about joints.

d. Increased uric acid in the blood.

e. Characteristic roentgenological findings of punched out areas in epiphyses of the bones.

Local disease in one large joint may cause some confusion. X-rays are of the greatest aid in determining the presence of joint tuberculosis. Subdeltoid bursitis should be diagnosed by the physical examination showing localized tenderness, characteristic pain on abduction and at times by roentgenograms showing calcification in the bursal sac.

The diagnostic problem is then two fold—first, to separate arthritis from other confusing clinical conditions; and secondarily, to place the individual case of arthritis in its proper group. Rational and successful treatment awaits such recognition.

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THE TREATMENT OF ARTHRITIS BY ELECTROPYREXIA*

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The treatment of chronic infectious arthritis by diathermic hyperpyrexia was first described in the *ILLINOIS MEDICAL JOURNAL*, November, 1931.¹ Since that preliminary report was published several American and European workers have reported their experiences with electropyrexa in the management of this disease. With the exception of Tenney,² who used radiotherapy, the other reports deal exclusively with the diathermic method. In favor of diathermic hyperthermia, however, is the ease with which it can be controlled at any stage of the fever curve, as well as the safety of the procedure. Neymann, Feinberg, Markson, and Osborne³

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³Read before the Section on Medicine of Illinois State Medical Society, Peoria, May 16, 1933.

have discussed the other methods in some detail in a previous communication, and you are referred to that article for more complete information. The purpose of this paper, is to present a larger group of treated cases observed over a longer period of time, rather than to enter into a discussion of the different techniques in use. Furthermore, it is intended to emphasize the fact that eight or ten hour artificially sustained temperatures of 104° or higher, by any safe means, is a valuable addition to the therapy of resistant cases of arthritis.

Selection of Cases. Probably our greatest error in the early stages of our work arose from the improper selection of cases. Several severe reactions occurred with patients of the hypertrophic group, such as fibrillation, myocardial failure, acute delirium, and vasomotor collapse, but fortunately no deaths occurred as treatment was abruptly terminated in each instance and restorative measures applied. We now exclude this group entirely, as we have very convincing evidence that this degenerative type of arthritis has a high incidence of cardiorenal damage, probably 30%⁴ more than a non-arthritic group of the same age and constitutional type. Rightfully, this disease should be classified as an arthrosis to distinguish it from the inflammatory conditions of the joints, or the arthritides. The degenerative lesions in the joints are considered by many as a manifestation of the general changes of senescence.

We now choose our cases from the infectious group entirely. Infectious arthritis is used synonymously with rheumatoid arthritis of the British and proliferative arthritis described by Nichols and Richardson.⁵ This group includes the younger arthritics whose cardio-vascular systems are able to withstand this rather strenuous treatment. However, in a few instances, patients with compensated hearts and valvular lesions, mitral stenosis and insufficiency, withstood a modified temperature curve very well; i.e., a curve of shorter duration with lower plateau than ordinarily used. All patients selected for treatment are carefully checked up in the general medical clinic with a re-examination in the arthritis clinic according to a definite, thorough routine in use for many years. This method helps us rule out many vague syndromes simulating arthritis, and, at the same time, gives us an opportunity to determine the

patient's ability to withstand hyperthermic treatments. After the routine measures of management are tried first without any decided improvement, hyperpyrexia is then advised.

Technique. Eight weekly treatments have been arbitrarily chosen as a course although a larger number might prove more beneficial. At least, it is certain that eight should be the minimum number in one course. Obviously, these treatments must be given in a hospital under the constant supervision of a nurse who is familiar with all the details of the technique as well as the reactions that occur. A physician must be on call at all times. Preferably, the patient enters the hospital the night before and is given a light diet. Following breakfast at 8 A.M., the treatment is started.

A high frequency current generator of ample capacity is of prime importance. The generator we use is capable of delivering ten amperes under load, and gives us the opportunity to treat two patients simultaneously.

The desired temperature is reached through heat insulation. This is a very essential factor for the successful maintenance of the fever over a number of hours. The use of a heat insulating treatment bag makes this very simple and effective. The treatment bag is opened and placed over the patient's mattress—so that he or she is wrapped in two layers of bath blankets to absorb the perspiration. Special care is given to the region of the shoulders and neck where there is the greatest likelihood of heat loss. The entire bag is then closed by means of a hookless fastening arrangement (zipper type). There is a suitable opening for the electrode leads, and the thermometer readings. The patient is entirely enclosed with the shoulders and neck thoroughly insulated from heat loss no matter how restless he or she may become. The advantage of this waterproof bag is that it can be washed after use without damage. A recording or registering thermometer shown in Figure 1, is the type used. However, an ordinary rectal thermometer can be used in an emergency.

We feel that the electrode application is of sufficient importance to be given in detail. With the patient in a sitting position the entire trunk is anointed with a conducting lubricant. Then the Neymann fenestrated electrodes are applied so that the upper border is at about the level of the second or third dorsal vertebrae, with the

jacket placed over the electrodes low enough not to chafe under the axilla. Now the patient lies down, and if necessary, the jacket is straightened out under the buttocks. The chest electrode is next applied but not moulded to

eight hour period the patient is uncovered and allowed to cool until the rectal temperature drops to 100° F, at which point a tepid sponge bath is given and the patient placed in a freshly prepared bed. The time required for the entire procedure is approximately twelve hours.

CONDITION AND REACTIONS OF PATIENTS DURING TREATMENTS

The fever curve of arthritic patients is quite characteristic, the mouth temperature crosses and re-crosses the rectal temperature, but the normal relationship between the two is quickly re-established if the current is turned off temporarily. Restlessness and anxiety are prominent features at the height of the curve and are probably a physiological method of stimulating venous return.⁷ In the average case, gr. $\frac{1}{4}$ morphine hypodermically quiets the patient. The tremendous fluid loss due to the profuse perspiration is partially supplied by the liberal allowance of fluids. The loss of chlorides which takes place coincidentally⁸ is often manifest by vomiting and crampy pains in the muscles, and to offset this, we are now adding 6 grams of sodium chloride to each litre of water. The perspiration which, at first, is acid, soon becomes neutral and remains so during the entire treatment. The distribution of the sweating is peculiar. Sometimes the upper part of the body is bathed in sweat while the lower part remains dry. In a subsequent treatment with the same patient, a generalized sweating may occur. Probably the best guides to the patient's condition during treatments are the pulse rate, the pulse pressure, and patient's color. These should be noted every 15 minutes. Facial pallor or circumoral pallor often antecedes peripheral circulatory failure as does a pulse rate above 160 with a sudden drop in the systolic pressure. The treatment in such cases should be promptly discontinued and the temperature brought down to normal as quickly as possible. In the average case the systolic pressure remains unchanged or slightly increased with a drop of 30 to 40 M.M. of mercury in the diastolic pressure. However, since the routine use of morphine has been adopted, less variation in the diastolic pressure is noted. Intense local reactions at the site of previous typhoid injections, accompanied by a severe chill, may occur. We now avoid this by discontinuing all treatment for one week previous to hospital entry.

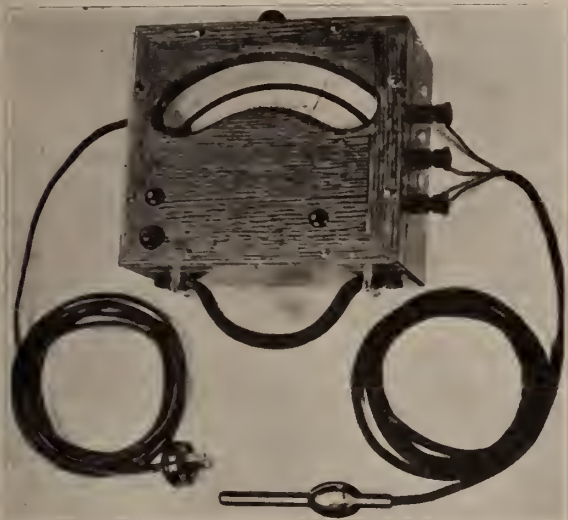


Fig. 1. Recording thermometer.

conform to the contours of the trunk, in fact, the hands play no part at all in shaping the electrodes. This is accomplished entirely by means of the retaining canvas jacket which is first laced evenly down the front and finally down each side. When this is carefully done, the electrodes will conform well to the shape of the trunk without uneven pressure at the edges which is quite often the cause of the so-called "hot spots."

A recent study of various conducting lubricants⁶ has shown that many of them are unsuitable for high frequency current conductivity. This work clarifies the so little understood problem of "hot spots" and scalds occasionally seen and erroneously thought to be high frequency current burns. As a result of this investigation, a new conducting jelly has been compounded which should make diathermy applications much safer and more comfortable.

The amount and duration of the current flow varies with the individual. Ordinarily, we use from thirty-six hundred to six thousand milliamperes, four thousand being the average. Our objective is to maintain the temperature at 104° for eight continuous hours, however, only one or two hours of the current application is required to reach this height. At the end of the

The severe pains in the joints which occur in the early stages of the curve, disappear as the temperature rises. The average loss of weight is from two to five pounds but it is regained in a few days. The later reactions, occurring two or three days after treatment are herpes labialis, weakness, loss of appetite, and increased joint pains. With the exception of the herpes, these symptoms promptly disappear leaving the patient stronger, with a better appetite, decidedly less joint pains and an increase in weight.

Laboratory Data. There is no variation from normal in the opsonic index, agglutinins, or complement content.⁹ The leucocytes are markedly increased at the height of the curve with a relative increase in polymorphonuclear cells. The erythrocytes are increased as is the hemoglobin. Dehydration partly accounts for these findings but stimulation of the bone marrow, as evidenced by the increase in the staff cells, may play a role.¹⁰ The tendency of the eosinophils to disappear as the fever rises has no adequate explanation as yet. Sedimentation rates¹¹ taken after the treatments are completed, correspond with clinical improvement.

Microscopic studies of the nail-bed capillaries show, during the fever, an increase in the size, the number, and in the rate of blood flow.² There are also increased skin temperature readings as well as oscillometer readings of the deep circulation.

Blood chemical analysis shows an increase in the urea, non-protein nitrogen and uric acid which is accounted for by concentration. The blood⁸ chlorides show no change or a slight decrease, indicating that there is a shift from the blood to tissues due to the concentration of approximately ten per cent. About 18 to 24 grams of sodium chloride is lost at each treatment and definite decline in the chloride content of the gastric secretion is noted.⁸ There appears to be discrepancies on the blood ph. and alkali reserve by different workers. Mortimer¹² reports a definite decrease of the plasma CO₂ in both man and dogs. Bischoff,¹³ reporting on the CO₂ combining power on human subjects, noted no change or a slight increase in the alkali reserve. Feinberg,¹⁴ in 74 determinations, did not observe any increases in CO₂ combining power of the blood with high fever, although

three (3) cases showed an increase of ten per cent. (10%) by volume. He also noted that alkalization of the patients previous to hyperthermia increased the CO₂ combining power before treatment, but during the fever it returned to normal. Blood lactic acid determinations on a series of our cases,¹⁵ at various points of the fever curve showed no variation from the normal.

Clinical Results. Nine cases (Table 1), received a full course of eight treatments by diathermic hyperpyrexia, the temperatures ranging above 104 F., from eight to ten hours. One of this group received only six such treatments. All have been under observation from one to two years since we completed one course, and have been checked up at frequent intervals. The last survey, made May 3, 1933, showed the following—one had complete relief from symptoms for fifteen months; and another for twenty-one months; two for twenty months; no other treatment having been used in the interim. Three of the group remained improved for periods of twelve to fourteen months but had some recurrences of decidedly less intensity than before treatment began. The three cases who were unimproved are worthy of some discussion. *Patient L. S.*, bed-ridden for about three years was given six treatments with slight improvement; i.e., she could turn over in bed unassisted. *Patient L. J.*, a severe case of atrophic arthritis, improved decidedly for three months but has now returned to her original status. *Patient D. F.* was a complete failure as she did not co-operate with us during the treatments and as a result the fever was not properly sustained. The summary of this group shows that seven or 70% remained decidedly improved from one year to twenty-one months. The duration of these remissions, we believe, is convincing evidence of the value of this type of therapy in spite of the fact that the number of cases treated is too small to be conclusive.

Dr. Coulter suggested that we also try sustained fever curves of shorter duration using such agents as radiant heat, hot water baths, diathermy, and blankets. These could be more easily carried out in the home, the office, or the clinic at a minimum cost to the patient. The results of such shorter curves, although not comparable to the well sustained groups, are sufficiently encouraging to warrant their con-

TABLE I. — THIS GROUP OBSERVED FROM ONE TO TWO YEARS
SUSTAINED TEMPERATURE CURVES — 8° TO 10 HOURS ABOVE 104° F.

	Type and Duration	Joints Involved	Previous Treatment	Hyperthermia	Results
F. D. — 34 F.	Chronic Infectious 3½ years.	Fingers, wrists, knees, cervical spine. Partial ankylosis of left knee (fixed in partial flexion). Motion extension 160°, flexion 90°.	Removal of tonsils and infected teeth. Vaccines, Physiotherapy (radiant heat, infra red, muscle training, home physiotherapy). Orthopedic (cast to left knee). Clinic treatment 1 year.	Began April 16. Ended May 15. 8 weekly treatments.	Improved. Is able to walk in erect position. Motion in fingers and wrists markedly improved. Now able to do own housework for first time in 2 years. Remission — 14 mos.
N. P. — 34 F.	Chronic Infectious 4½ years.	Fingers, wrists, shoulders, knees; walks with difficulty because of pain in both ankles.	Treatment of chronic suppurative sinusitis — chronic purulent otitis media and chronic endocervicitis. Vaccines — colon diet, physiotherapy, management of constipation. Clinic treatment 1 year.	Began April 22. Ended May 22. 8 weekly treatments.	Improved. Relief from pain and stiffness in all joints. Is now able to walk without pain. Remission — 12 mos. Is still able to walk without pain, but has pain in shoulder.
E. C. — 34 F.	Chronic Infectious 3 years.	Polyarticular. Cervical spine, shoulders, fingers of both hands, and elbows. Pain in both feet.	Tonsillectomy. Vaccines and non-specific therapy, arsenicals, iodides. Clinic treatment 6 months.	Began May 21. Ended June 25. 8 weekly treatments.	Markedly improved. Relief from pain. Stiffness of spine decidedly better. Other joints less painful. Remission — 21 mos.
D. F. — 18 F.	Chronic Infectious 18 mos.	Wrists, elbows, knees, shoulders and fusiform swelling of fingers.	Began at once with diathermy.	Began July 23. Ended Sept. 21. 8 treatments.	Not improved. Patient did not co-operate. Temperature curve not sustained.
D. B. — 45 M.	Subacute Infectious 14 mos.	Polyarticular especially the proximal interphalangeal joints 3rd and 4th fingers of left hand. Unable to work 6 months.	Tonsillectomy. Treatment of prostatitis, autogenous vaccines, physiotherapy. Clinic treatment 3 months.	Began May 20. Ended July 8. 8 treatments.	Markedly improved. All pain and stiffness entirely relieved after 4th treatment. Iritis improved after 3rd treatment. Remission — 20 mos.
E. P. — 31 F.	Chronic Infectious 3 years.	Right wrist, ankles, knees. Difficulty in walking. Cannot straighten arms and legs.	Tonsillectomy. Vaccines, physiotherapy, body mechanic exercises. Treated 1 month in clinic.	Began June 5. Ended Aug. 17. 8 treatments.	Improved. Remission — 12 months.
L. J. — 40 F.	Chronic Infectious 5 years.	Fingers, wrists, knees, elbows, ankles. Partial ankylosis of wrists and elbows and fingers. Difficulty in walking stairs due to stiffness.	Treated in many clinics. Our clinic for 2 years, with indifferent results.	8 treatments. Last treatment Nov. 30th—'32. Last seen May 3rd — '33.	Not improved.
G. T. — 47 F.	Chronic Infectious 2½ years.	Limitation of motion and pain right knee and elbow, pain and swelling of fingers of left hand, lumbar pain.	Care of teeth. Tonsillectomy, autogenous vaccine, baker, massage, body mechanic exercises, reducing diet, thyroid.	8 treatments. Last observed May 3rd — '33.	Marked improvement. Motion in right knee and elbow markedly improved. Relief from pain decided. Remission — 15 months.
F. B. — 37 M.	Chronic Infectious 3½ mos.	Pain, stiffness of ankles — both feet and knees and elbows. Unable to work.	Maxillary sinusitis treated. Autogenous, vaccine from tonsil, radiant heat. General care for secondary anemia.	8 treatments. Began Sept. 25 — '31.	Markedly improved. Remission — 20 months.
L. S. — 48 F.	Chronic Infectious 3½ years.	Fingers, wrists, elbows, hips, knees and back. Invalid.	Treated in many clinics.	6 treatments. Last seen May, 1932.	Not improved.

NINETEEN TREATMENTS GIVEN TO FIVE PATIENTS ARE NOT INCLUDED IN THIS GROUP. (Course not completed.)
TOTAL TREATMENTS — LONG CURVES, NINETY-SEVEN.

tinued trial. A resume of this group is given in Table 2.

Nine cases were given fever curves of 104° for a four hour period. The total number of treatments given to this group was seventy-

seven. Six was the minimum number, twelve the maximum, while the average was eight. Five of this group were definitely improved with remissions of three months or longer. Three of this group were improved for only one

TABLE II. — SHORT TEMPERATURE CURVES — 104° F. FOR FOUR HOURS.
AGENTS USED — HOT WATER BATHS, ELECTRIC BAKER, BLANKETS,
DIATHERMY — THIS GROUP OBSERVED ONE YEAR OR LESS.

	Type	Joints Involved	Previous Treatment	Hyperthermia	Results
L. M. — 51 M.	Chronic Infectious. G. C. 9 months.	Spine,tempero-mandibular articulation. Inability to open mouth completely; cannot straighten back.	Treatment of posterior urethritis and otitis media. Tonsillectomy — care of teeth, hot baths — vaccines, etc. Clinic 5 months. Slight improvement.	9 treatments.	Complained of weakness, loss of 12 lbs. weight, but all pains relieved. Can straighten back without discomfort. Short remission — recurrence.
G. G. — 35 F.	Chronic Infectious 5½ years.	Wrists, elbows, knees ankles. Partial ankylosis of right elbow and fingers, ankylosis left knee and wrist. Rheumatoid arthritis, nodes on both forearms.	Treatment in many institutions and clinics — no improvement. Clinic — 9 mos.	12 treatments.	No improvement. Recurrence after one month. Marked gain in weight.
G. S. — 46 M.	Chronic Infectious 3 years.	Cervical spine, left elbow, right shoulder, both feet and wrists. Partial ankylosis right elbow.	Tonsillectomy. Vaccines, radiant heat, massage, baths — No improvement. Clinic treatment 2 years.	6 treatments. Last treatment June, 1932. Last seen, May, 1933.	No improvement.
J. G. — 29 M.	Subacute Infectious 5 years.	Polyarticular especially hip joint and cervical spine.	Treatment outside clinic 4 years. Tonsillectomy, care of teeth, physiotherapy. In clinic — vaccines, radiant heat, massage, etc. No improvement.	12 treatments. Last treatment Oct. 11, 1932; last seen, May 3rd, '33.	Improved. Still has stiffness in right hip but increased motion. Can straighten back without pain. Remission — 5 months.
P. J. — 41 M.	G. C. Arthritis.	Ankles and right hip. Swelling, pain, stiffness of both ankles. Limbs because of pain.	Treatment in G. U. Dept., posterior instillations, etc. Arthritis Clinic, vaccines, radiant heat, etc. Slightly improved.	7 treatments.	Improved after 2nd treatment. Swelling and pain disappeared. Remission — 3 months.
M. W. — 40 F.	Chronic Infectious.	Polyarticular — particularly right hand and ankle. Severe backache (cervical spine).	Foci — tonsils, teeth and sinuses. Treated in clinic one year.	8 treatments. Last Jan. 27, '32. Observed, May 3rd — '33.	Improvement for one month. Recurrence of symptoms.
W. S. — 44 M.	Infectious Arthritis 3 years.	Left shoulder severe, right shoulder, back, elbows and fingers. Knees and ankles at times.	Wetherbys — vaccine — physiotherapy (radiant heat, etc.). Treated in clinic 2 years.	8 treatments. Last Mar. 24, '33. Last seen May 3, 1933.	No improvement. Still has severe pains in shoulders and other joints. Relief only temporary.
A. K. — 38 F.	Infectious Arthritis.	Pain in wrists, elbows, knees, ankles — since Aug. 1932.	Teeth removed — Poncreatic tissue extract, etc.	8 treatments. Last April 18, '33. Last seen, May 3, 1933.	No improvement.
A. McG. — 37 F.	Infectious Arthritis 7 years.	Wrists, knees, shoulders, elbows.	Teeth removed — tonsillectomy. Hysterectomy — before coming to clinic. Clinic treatment since November, 1932.	7 treatments. Last April 28; Last seen, May 3rd, '33.	Improved for one month after treatment.

FOURTEEN TREATMENTS ARE NOT INCLUDED IN THE ABOVE TABLE (Course not completed).

TOTAL SHORT CURVE TREATMENTS, NINETY-ONE.

month and are included in the group with no improvement. The percentage of improved cases, therefore, is 56%.

Nineteen treatments, not included in Table 1 were given to five patients. These patients did not return for various reasons and are not included in our report. Fourteen treatments not included in Table 2 represent unfinished courses of less than six. Thus, one hundred and eighty-

eight treatments have been given to twenty-eight different patients without a single death. This speaks well for the safety of the method provided ordinary care is used.

Other authors have reported favorable results in treating this disease with electropyrrexia. Bishop, Horton and Warren,¹⁶ state that fifteen unselected cases were definitely benefited. Tenney,² using radiotherapy, on 63 arthritis

cases reported, seven symptom free, 48 markedly improved, and eight unimproved. Fifty-five, or 87% were definitely improved for a period of eight months. Auclair, Emery and Weil,¹⁷ are very enthusiastic proponents of this therapy in the treatment of rheumatism, arthritis and gout. Cecil,¹⁸ states that his results are disappointing, but mentions the fact that in some cases the results are permanent.

In conclusion, we wish to state that this method is not offered as a cure for arthritis nor are the facts presented intended to convey the impression that it will replace all types of established therapy, but rather is it presented as a new method which offers much more hope for the intractable cases.

SUMMARY

The results of the prolonged hyperpyrexia treatments are discussed, and compared with those of the shorter sustained group. The evidence presented is preponderantly in favor of the former both as to the number benefited and as to the length of the remissions. From the reports of others as well as our own results, we believe, electropyrrexia has been established as a valuable method in the treatment of selected cases of intractable arthritis. The technique, laboratory data, and reactions, are discussed in some detail. The group of cases presented is too small to be conclusive, but is very convincing when considered from the point of view of the length of the remissions. Diathermic hyperpyrexia is a safe procedure, provided ordinary care is used.

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METHODS OF PRODUCING HYPERPYREXIA BY VARIOUS PHYSICAL AGENTS*

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There is at present a great deal of work being done both in this country and abroad to evaluate electrically induced fever as a therapeutic procedure. Evidence is fast accumulating attesting to its superiority, and it will undoubtedly in the future, supplant many forms of foreign protein therapy. Electrically produced hyperpyrexia was first introduced by Neymann and Osborne¹ in 1929 using high frequency currents (diathermy). Since then other methods have been introduced and each has its own particular advocates.

For the past year we have conducted a careful investigation to determine the relative merits of the various methods employed for the production of fever. We have used high frequency currents, ultra high frequency currents, electric light cabinet, electric blanket, hot water, and infra red cabinet. As far as practicable each patient was subjected to the same number of treatments by each of the various methods, and the reactions of the patients noted.

All patients were sent to us from Northwestern University Medical School's arthritis clinic with a diagnosis of infectious arthritis. All of these patients had failed to respond to

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other methods of treatment. In each patient a temperature of 104° F. or more was induced and maintained for four hours. We also wanted to determine the therapeutic value of this short temperature curve. No patient was hospitalized. They came to the medical school in the morning, were given their treatment, and left late in the afternoon, some patients traveling by street car. Such a procedure proved quite safe.

Twenty-five treatments were given by means of diathermy using the technic first described by Neymann and Osborne.³ This method from the standpoint of the patient's comfort is undoubtedly the method of choice. Undoubtedly this comfort has a physiological basis because the heating is more internal and not at the expense of the delicate nervous mechanism of the skin as is the case of external applications where the internal heating is produced by con-

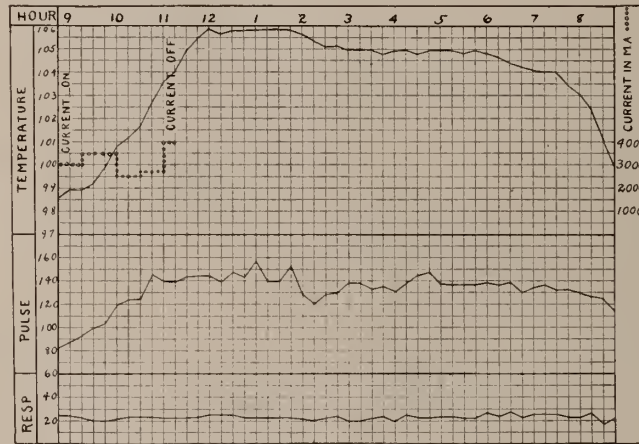


Fig. 1. Temperature curve produced by diathermy.

The temperature attained was held by using the treatment bag which has been described by Feinberg, Osborne and Steinberg.² The necessary thorough heat insulation without such a bag is difficult to secure. Moreover, the use of such a bag makes unnecessary the employment of numerous heavy blankets, and prevents the extreme exhaustion of the patient therefrom.

A record of pulse, respiration and rectal temperature is made every fifteen minutes. An exception is made in the case of water for reasons explained later. It is the safest practice, as has been repeatedly emphasized by others, to rely upon rectal temperature. We used electric indicating thermometers, and if possible such thermometers should always be used. The value of having the temperature constantly under observation obviously needs little comment. A device of this type is illustrated in Fig. 1. (See paper by Markson and Osborne.)

The patient often becomes quite restless and apprehensive when the temperature is at 102° or 103° F. At this time he is given $\frac{1}{4}$ grain morphine sulphate.

duction. One of us has data soon to be published illustrating this action graphically. The cooler skin temperature probably makes diathermy a safe procedure. It is true that patients with excessive adipose tissue do not tolerate diathermy well with the usual technic as noted by Neymann et al.⁴ However, this difficulty can be overcome by using the cuff method of application.

Kahler and Knollmeyer⁵ in 1929 were the first to report the use of an electric light bath for the production of fever. They secured and maintained a temperature of 104° F., for approximately forty minutes in the treatment of general paresis and arthritis deformans.

Our cabinet is made in two sections and placed on the bed over the patient. We use sixteen 60-watt incandescent lamps mounted in the cabinet twenty-one inches from the patient's mattress. The cabinet was thermally insulated by blankets. Particular care had to be taken to insulate thoroughly around the patient's neck protruding from the cabinet. Once the desired temperature is reached the lamps are

turned off and the patient enclosed in the heat insulated treatment bag. It is rarely necessary to give a second application of heat when this method is used. The current is usually turned off when a rectal temperature of 105° F. is reached. Temperatures by this method are obtained about as quickly as with diathermy. An occasional fat patient seemed to be more comfortable in the cabinet, but the majority had a preference for diathermy. In spite of the freedom from any restraint, many were more restless than when wearing the diathermy electrodes. When diathermy is not available, this method can with care be substituted with safety. In all, twenty-nine treatments were given with the electric light cabinet.

Artificial fever was first produced by hot water baths. Much experimental work was done on animals before its actual clinical application in 1927 by Schamberg and Tseng.⁶ Mehrrens and Pouppirt⁷ published their clinical results in 1929 employing hot baths to produce fever. These workers were able to secure rectal temperatures of 105° F., and maintain them for two hours. Our technic varies slightly from theirs. We use a water temperature of 110° F. The patient's rectal temperature rises to 105° F. to 106° F. in fifteen to forty minutes. When the patient's temperature reaches the desired level, usually 106° F., he is placed in the heat insulating treatment bag. To maintain this temperature the treatment bag must be preheated to prevent a decrease in the patient's temperature on placing him therein. For this purpose we employ three electric heating pads. Thus for the first time we have been able to maintain temperatures of 105° F. or more for from four to eight hours by this method.

It is dangerous, however, to employ this method unless an electric indicating thermometer is used. Pulse, respiration, and rectal temperature are recorded every five minutes. An assistant keeps the temperature continually under observation when 104° F. is reached because from that point the temperature has a tendency to climb with extreme rapidity and one has to guard against collapse. While this is the quickest way to raise body temperature it is undoubtedly the most uncomfortable as well as the most dangerous. Until we knew the reactions of our patients to other methods we did not subject them to water. Some patients

in spite of the marked discomfort preferred to battle it out because it meant a decided shortening of the treatment time. The quick temperature rise, lack of skin elimination, and hydrostatic pressure all tend to add to the patient's discomfort and occasionally give rise to abdominal cramps. Some patients did not tolerate this method at all and one patient continually tried to climb out of the tub. The immersing in hot water is probably much less desirable than either of the preceding applications. Thirty-one treatments were given by this method.

In 1931 Wilgus and Lurie⁸ reported the use of electric blankets for the production of fever. We found the use of such a blanket a dangerous and hazardous procedure. For two years we have been experimenting to procure an electric blanket safe for use. While a great improvement in this direction has been made we do not feel that this is anything more than a makeshift method. The temperature of the bed should not exceed 120° F., at any time. This is the most uncomfortable and exhausting treatment so far described. It is the slowest method of inducing body temperature. The electric blanket may be used inside or outside the treatment bag and we have used both applications. When used inside the temperature rise is more rapid but usually the patient has greater discomfort and there is also some danger of blistering the skin. Fourteen treatments were given by means of the electric blanket.

We are not yet prepared to make any statement regarding ultrahigh frequency current as we are still experimenting with this method. We have given twelve treatments with this apparatus.

Four treatments were given in the infra-red cabinet but this proved to be very unsatisfactory and was finally discontinued as too dangerous. The patient's temperature fluctuated up and down all through the treatment.

Tables 1 and 2 give a summary of the treatments given by the various agents. We do not feel that there is any specific effect produced by the agencies employed other than their ability to raise body temperature. The therapeutic results obtained we attribute only to the fever produced.

TABLE I—NUMBER OF TREATMENTS
GIVEN BY VARIOUS METHODS

Method used	Number of Treatments Given	Number of Patients Treated
Diathermy.....	25	11
Radiant Heat.....	29	11
Water.....	31	9
Electric Blanket.....	14	6
Ultrahigh Frequency.....	12	6
Infra-red.....	4	1
Totals.....	115 treatments given	

TABLE 2—NUMBER OF TREATMENTS
PER PATIENT

2 patients received.....	12 treatments
2 patients received.....	9 treatments
5 patients received.....	8 treatments
1 patient received.....	7 treatments
1 patient received.....	6 treatments
1 patient received.....	4 treatments
4 patients received.....	3 treatments
1 patient received.....	1 treatment
17 patients received.....	115 treatments

Many patients during their treatment became quite nauseated. This has been attributed to the loss of chlorides by Simpson.⁹ He recommended the use of salt in the drinking water in an attempt to replace this loss and thereby prevent the distress of nausea. We used a 0.6 per cent solution as suggested for drinking and this concentration is not distasteful to the average patient. While this did not eliminate nausea entirely it did prove very effective and of decided value. During the treatment patients should be encouraged to drink as much as possible. Pulse rate is a good index of the patient's condition and should not exceed one hundred and sixty per minute. The appearance of cyanosis is a signal for careful observation. A danger signal, less frequently seen, is the appearance of pallor around the region of the mouth. This may be the first warning of a possible vasomotor collapse. The respiratory rate is usually little changed, although it may occasionally rise as high as forty per minute. A marked drop in pulse rate is sometimes seen and this too is rather an unfavorable sign.

Dr. Markson of the arthritis clinic at Northwestern University Medical School has made a study of the comparative merits of an eight hour and four hour temperature curve of 104° F.

(See Tables 1 and 2 in Dr. Markson's paper.)

CONCLUSIONS

1. Various agents used in the production of artificial fever are evaluated.

2. An artificial fever of 104° F., or higher maintained for four hours was induced in seventeen patients.

3. One hundred and fifteen treatments were given without hospitalization and with no danger to the patient.

4. A four hour temperature curve of 104° F., is less effective than an eight hour curve in the treatment of infectious arthritis.

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DISCUSSION ON SYMPOSIUM ON ARTHRITIS

Dr. Samuel J. Lang, Evanston: We have a smaller clinic at the Evanston Hospital than the one at Northwestern University, but our efforts fall along the same line. Some believe that acute rheumatic fever, rheumatoid or atrophic arthritis and osteo-arthritis are but different manifestations of the same disease process. We find it difficult to catalogue all cases of chronic arthritis into the type of a classification shown by Dr. Boyd, although we believe that the classification used by the New York group and described by Cecil is probably the best. Perhaps the allergic division as shown in this grouping could be included under the infectious type. A good many of these rheumatoid conditions are, we think due to bacterial allergy. It seems significant that some find streptococci in the blood stream in as high as 68% of cases. We find 20% positive blood cultures in our combined types of arthritis and several of these are among the so-called typical hypertrophic type. If streptococcus viridans has anything to do with the production

of arthritis, then it should also have something to do with the hypertrophic as well as the atrophic type.

Dr. Boyd spoke of the x-ray not being necessary in many cases. That brings up an experience of ours that was most embarrassing, of a woman who proved to have multiple myeloma, but had been treated elsewhere for chronic arthritis for months. This looked like a typical infectious arthritis. The x-ray helped to reveal the diagnosis in this case.

Dr. Arlon spoke of foci of infection. This is naturally a very important subject. However many are going about without teeth in their mouths but still having their arthritis. It seems that persons who have carried foci for number of years can expect little benefit from their removal.

We agree with the essayists that there is no single type of treatment for arthritis. General treatment must be undertaken. I have had no experience with hyperpyrexia.

Dr. Robert Lonergan, Evanston: I have been interested with Dr. Lang in this question of arthritis.

Dr. Lang brought up the question of classification and I wish to add a few words because I am out of sympathy with the usual ideas of classification. The literature has been confused by the enormous number of divisions and these have been reduced to a simple one and Goldthwaite's is generally used. However, Weatherby has quoted his series in which x-rays were taken on 50 consecutive cases of arthritis. He states that out of 100 per cent only 33 per cent could be defined as a pure type, about 57 per cent were mixed and about 8 per cent remained entirely unclassified or without x-ray changes. As a matter of fact it is very natural when you attempt to classify disease that treatment follows according to the different subdivisions you use. Actually in arthritis this is not the case. Treatment is very much interrelated in these different types.

It is very difficult to find a true text-book picture of atrophic or hypertrophic arthritis. After all, there is no more reason why we should assume there is a distinct entity because of joint pathology than there is for a skin man to classify all his cases solely as a dermatitis.

We have a generalized problem in arthritis and we have been in error in trying to classify the treatment of a general arthritis on the basis of different divisions.

I apologize for expressing an opinion because I am not familiar with the treatment by means of hyperpyrexia, but I feel that it has a very limited usefulness and is a rather drastic procedure.

Dr. Douglas Boyd, Highland Park: We owe a debt of gratitude to the orthopedists who have done most of the work on arthritis until very recently.

We certainly do not want to get into a discussion of the classification of arthritis. I do not think we will ever have a satisfactory classification until we find the reason why arthritis comes. I think that the best evidence that there are two fairly distinct types of chronic arthritis is the experimental evidence brought forward by Keyes of St. Louis who has reported in

many papers an ability to produce an arthritis which has all the appearance of a degenerative or hypertrophic arthritis simply by trauma without introducing the element of infection. He has been able to produce in animals the infectious type or atrophic type, as I understand it, with trauma plus infection.

I think there is a good deal of disagreement in the question of blood cultures. I know Dr. Cecil's work has been questioned. The work which I have accepted as the best controlled work has been that which has come from Dr. Dawson's clinic in New York. They have not been able to repeat the work of Cecil and have not been able to find the high percentage of blood streptococcic infections that Cecil reported. I think there has been some question about the controls that Cecil reported in his work and I do not believe these reports have been generally accepted by bacteriologists.

We feel, as Dr. Lonergan stated, that the problem is probably much deeper than one of bacteriology. It is probably an indication of disturbed physiology. I think we are just scratching the surface when we do blood cultures and use vaccines. I think it is a problem of a generally disturbed physiology which is indicated in the many changes that take place. A study of the influence of diet, of the disturbed calcium metabolism, of the high vitamin diets proposed by Fletcher all seem to be steps in the right direction.

I feel the problem is very much as Dr. Cecil stated in a paper of his which appeared in the *Journal of the American Medical Association* about three weeks ago in which he said that this problem must be compared with the problem of syphilis or the problem of tuberculosis. We may be able to get better results if we treat these patients over a long period of time, very much as we do patients with tuberculosis.

Dr. A. J. Arlon, Chicago (in closing): I have nothing much to add except that Dr. Lang interested me in his statement that all arthritis was one disease. That may be true, but in the hypertrophic and atrophic types the pathology is diametrically opposed. In the atrophic there is negative calcium balance while there is a positive calcium balance in the hypertrophic type. There is a marked difference in the joints and the way the pathology comes about. There are many mixed types, of course, and sometimes one goes into the other. From a clinical standpoint the types are easily separated.

Dr. D. E. Markson, Chicago (in closing): Dr. Lang emphasized the fact that electropyrrexia should be reserved for selected cases. In our paper, I believe, enough emphasis was placed on that particular point. Our work with hyperpyrexia was intended as a clinical research problem so that only well controlled cases were included in this series. It is probable that less severe arthritis should respond even better to this type of therapy and we are planning to treat such cases in the future.

An apathetic profession gave Europe its vicious form of health insurance. Is our profession to be so obdurate as to offer nothing better here?—James C. Sargent, *The Milwaukee Medical Times*.

ENDOCRINE DYSCRASIAS AND MENTAL DISORDERS

A PRELIMINARY REPORT

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Introductory. This is an interim report, covering the period November, 1930, to November, 1932, of certain procedures undertaken with the intention of determining whether there was a relationship between endocrine dyscrasias and mental disorders and whether correction of the endocrine disturbance would be valuable in the treatment of mental disorders.

In its beginning this investigation was rather informal, but as experience grew it has gradually become better organized. It is only lately, for instance, that even a stenographer has been detailed from the institution. Previously notes on endocrine examinations have been taken in longhand by staff members. The work was entirely voluntary on the part of all concerned. For the staff it represented a large amount of additional work; for the extramural member it represented a contribution of his time and his own expenses. The only cost to the state was for materials used in laboratory work and for some medicaments. No pharmaceutical houses were asked to contribute material. Lately we have had some liberal contributions, but during the period covered by this report we used no materials except those purchased by the hospital and by patients' families.

The need for keeping down expenses has been a corollary of one of the principal motives for the study which was to reduce the cost of insane patients to the state.

An interesting angle of this investigation has been the cooperation obtained by Drs. Riley, Steinberg and Finkelman from patients' families. These staff members have had immediate supervision of this work.

1. BACKGROUND

That a relationship may exist between endocrine dyscrasias and mental disorders is not

a new idea.¹ A century ago, observations on thyroid deficiency included reference to the mental state. In 1912, Sir Victor Horsley urged the importance of posterior pituitary deficiency in the etiology of epilepsy.

Thyroid. The relationship of mental development and function to the thyroid is best exemplified by the cretin who seldom attains a mental age of more than 12, by the myxedematous patient who suffers a progressive retardation of his mental processes and by the victim of Graves' disease in whom the mental processes are greatly speeded up, many times to the point where an acute mania or psychosis occurs.² One patient, not included in this report, had his mental breakdown coincident with an exacerbation of Graves' disease; lobectomy was followed by a tremendous regeneration of that lobe and a great increase in the size of the other. There was corresponding increase in his mental excitement, which progressed to the point where he had to be confined. At operation, the thyroid presented the appearance of unrestricted growth and extended from high up in the neck to beneath the sternum. Its removal was followed by his return to a normal state.

Gonads. The relation of ovarian function to mental and emotional states is shown by the changes in the girl's emotional make-up and mental outlook at puberty, the emotional disturbances that many times accompany pregnancy, the psychosis that sometimes follows delivery and the changes that accompany the menopause.

That testicular degeneration commonly occurs in victims of dementia praecox has been commented on for many years. A few cases have been reported as benefited by testicular transplants.³ It was necessary to castrate one of the cases in this series because of homosexual practices. No improvement in his mental state followed this and attempts at his former practices continued but with less vigor. The spirit was still willing but the flesh was weak, though he retained some power of erection.

Pituitary. The acromegalic is active, irritable and aggressive. Simmonds' disease is marked by mental retardation and lethargy.

Adrenals. Hoskins and Sleeper⁴ recently called attention to the relation between suprarenal deficiency—as they diagnose it—and secondary anemia, which is a frequent finding

among insane patients. With the facilities at our command we did not feel like making a diagnosis of hypoadrenia in any of our cases. It might easily be that many of them were suffering from a deficiency of suprarenal function. The low blood pressure, the lackadaisical attitude, the apparent easy fatigability, the presence of secondary anemia, all suggest hypoadrenia.

Cushing⁵ in his discussion of pituitary basophilism mentioned the tendency toward polycythemia. Moehlig and Bates⁶ have gone into the relation of the pituitary to erythrocyte formation. Our experience inclines us to the belief that pituitary dysfunction, which is readily recognizable, has more to do with secondary anemia in these cases than does suprarenal deficiency. If the latter is present, it might easily be secondary and due to the pituitary deficiency.

However, the extramural member has under his care in the Illinois Central Service an engineer, sentenced to institutional care by a neuropsychiatrist, in whom a diagnosis of hypoadrenia was made and who is improving on treatment with eschatin. Hartman, Beck and Thorn⁷ have called attention to the improvement in nervous and mental states under cortin therapy. The mental disturbance during some stages of Addison's disease is of course well known.

In this study, however, pituitary, thyroid and gonadal disorders have been the most common sources of trouble.

2. PROCEDURE

No patients were examined from an endocrine standpoint until they had been presented at staff meeting and their mental condition determined. Examination by some member or members of the staff ruled out non-endocrine conditions. Sign of endocrine dysfunction were sought for in statural deviation from normal, the relation of the upper to the lower measurement and of the span to the height; the condition of the skin, hair, nails and teeth. If obesity was present, its distribution was noted. The menstrual history was carefully inquired into. Laboratory work has consisted of a determination of the basal metabolic rate; the blood count, with particular attention to the differential; blood chemistry, particularly the determination of the non-protein nitrogen, urea, uric acid and calcium. It was rarely possible to secure an

accurate 24-hr. sample of urine and so we usually had to be content with a single sample.

No biologic tests were made. While the hospital is in process of securing colonies of mice and rats, it had none during the period of this investigation. There was a rabbit colony on the farm, but the staff was too crowded with routine duties to spare anyone to make these tests. This was not regarded as a particularly serious handicap. It is felt that a diagnosis based on the exclusion of non-endocrine conditions and the inclusion of positive endocrine findings plus the laboratory work we were able to have done is as accurate as can be made at this time.

Cases were examined clinically, a tentative diagnosis was ventured, and laboratory work ordered at one visit. At the next visit the patient was again seen and the findings were reviewed in the light of the laboratory data. The tentative diagnosis was established or rejected and treatment ordered or the case dropped without any treatment as was indicated at that time.

Treatment. The pituitary products used were antuitrin and posterior lobe extracts. They were administered hypodermically three times a week in such doses as the patient could tolerate. Some patients could take only five units of posterior lobe extracts without considerable pallor and abdominal cramps. Others could tolerate twice as much without symptoms. The amount given depended on the patient's reaction, the dose being kept below that which produced unpleasant abdominal cramps. Antuitrin was given in doses of one-half to one cc., depending again on the patient's tolerance. Unpleasant reactions to this product consist of headache and vascular flush, and dosage was kept below the amount that produced this reaction. Results of this medication have been surprisingly good, as shown in Table 2.

Ovarian medication consisted of the residue or of one of the standardized preparations, more often the residue, one ampoule given subcutaneously three times a week. If a standardized preparation was used, it was given on alternate days beginning a week before the expected menstrual period. A few cases were given theelin over considerable periods of time. The results attending it were not sufficiently encouraging to justify the expense involved in its further use. Progynon has been used in a few cases,

both by mouth and subcutaneously. It seems to have had a particular and peculiar effect not only in its estrogenic property, but also in its general effect on the patient.

Thyroid has been given by mouth. There was some question as to whether all patients actually got the amount ordered, but this has lately been overcome and they now get what is ordered. We confirmed the experience of Hoskins and Sleeper⁸ that some of these patients tolerate enormous doses of thyroid without disturbance. We have had a few who could use more than 30 grains a day without signs of thyroid intoxication. Thyroxin has never been used. We are not convinced that it is the whole thyroid hormone, and thyroid is much cheaper, less violent in its action and consequently much safer for use in this institution.

X-ray or diathermy was little used. The institution does not have a physician trained as a roentgenologist and there was some hesitancy about detailing therapy to a lay technician.

The progress of cases has been checked at in-

tervals of three to six months. Some of them have been on treatment for more than a year. A few have shown considerable improvement, only to relapse while still under treatment. Others progressed for a while and then seemed to come to a standstill. A few have shown considerable improvement but grew tired of treatment. In every instance their wish to discontinue treatment has been acceded to. A good many still under treatment are greatly improved but do not appear among the discharges or paroles, which is the standard set-up for measuring the efficacy of this treatment.

3. STATISTICS

The following table (1) shows the totals of patients handled, with the number and percentages of discharges and paroles, divided by sexes and ages, so far as records kept are available.

Satisfactory information was not at hand regarding the treatment given all these patients; case record folders for all did not contain it. So far as it was obtainable, in 90 cases, types of treatment and results, as indicated by releases, are summarized in Table 2.

TABLE 1

Total Patients Treated			Discharged	Per Cent.	Paroled	Per Cent.	Total Released	Per Cent.
Women —	Under 45.....	95	17	17.9	8	8.4	25	26.3
	Over 45.....	35	7	20.0	1	2.8	8	22.8
	Total.....	130	24	18.4	9	6.9	33	25.3
Men —	Under 45.....	42	8	19.5	5	11.9	13	31.4
	Over 45.....							
TOTAL.....		172	32	18.6	14	8.1	46	26.7

TABLE 2

Endocrine Treatment	Women			Men		
	Total Treated	Discharged	Paroled	Total Treated	Discharged	Paroled
Pituitary alone.....	7	3	0	3	1	0
Ovary alone.....	16	8	1			
Thyroid alone.....	6	0	0	1	0	0
Lugol's and/or Thyroidectomy.....	3	0	0	0	0	0
Pituitary and Ovary.....	18	2	1			
Thyroid and Ovary.....	17	1	0			
Thyroid and Pituitary.....	10	0	0	2	2	0
Thyroid, Pituitary and Ovary.....	5	0	1			
Castration.....				1	0	0
Insulin, Calcium and Carbohydrate.....	1	1				
TOTAL.....	83	15	3	7	3	0

Total treated, 90. Total discharged or paroled, 21 or 23.3%.

The hospital population of insane in all state hospitals is shown for June 1930, and June, 1931, in Table 3. The state issued no report for 1932.

TABLE 3

Present in all Institutions — State of Illinois — Insane.

	June, 1930	June, 1931	Endocrine Clinic
Dementia praecox.....	12,920*	13,314	108
Manic depressive.....	1,164	1,180	15
Invol. melanchol.....	257	229	13
Undiagnosed.....	658	756	12
Mental deficiency.....	1,185	1,227	9
Psychoneuroses.....	135	147	5
Psychopath. pers.....	65	73	2
Postencephalitics.....	9	33	3
Without psychosis.....	930	987	3
Epileptics.....	727	712	2
	18,050	18,658	172

Total discharges and paroles from all state hospitals for the year ending June, 1931, are shown in Table 4.

TABLE 4

Total discharges and paroles in all state institutions
year ending June 1931

Dementia praecox.....	1,217
Manic depressive.....	432
Involution melancholia.....	46
Undiagnosed psychosis.....	227
With mental deficiency.....	92
Psychoneurosis.....	110
With psychopathic personality.....	20
Postencephalitics.....	11
Without psychosis.....	1,017
Epileptic psychosis.....	54
(17.3%).....	3,226

There are four patients, three of them out of the institution, who do not appear in this survey. Two were cases of dementia praecox. One was treated at her home, greatly improved, and we were hopeful of her eventual cure, i. e., improvement to the point where she could care for herself and help with the housework, when her mother was taken ill and treatment was discontinued. She is paroled. An amenorrhoeic praecox seen by one of the staff interested in this work was given progynon by mouth. Her periods were re-established and she was discharged in less than 90 days from date of admission. Another case of pituitary deficiency, the growth and sex hormone being involved, could be discharged except that he has no job and would be dependent on society just as he is now. The

fourth case was the man with Graves' disease previously commented on.

4. DISCUSSION

The data obtained in this survey may be thus summarized:

1. At the Elgin State Hospital we have found a considerable number of patients in whom various endocrine dyscrasias may be recognized in association with their mental divagations.

No definite figures are presented on this topic. It is not considered necessary; the incidence of the more obvious endocrine stigmata—such as obesity, statural variations, dystrophy of skin and appendages, sexual impotence or menstrual disorder—is so obvious or so well known as to render complex statistical effort in our circumstances superfluous and burdensome.

The small number of cases of hypothyroidism has been a matter of considerable surprise. As the hospital draws its population largely from the Great Lakes Basin—a goiter zone—it was expected that this would lead all other glandular disorders in frequency.

2. We have found that we could relieve some of these endocrinopathies. The subcutaneous injection method was ordinarily used.

The difficulty of finding efficacious medications is gradually disappearing, thanks to the biochemists. This represented one of the largest items of actual cash outlay and we sought to keep it within bounds by using the unstandardized preparations.

3. Making all allowances, this survey, for its most important result, demonstrates that insane patients showing also evidence of endocrine dyscrasia have been improved with respect to their mental state in an appreciably greater proportion by the addition of endocrine therapy to the routine psychiatric procedures.

Of 172 patients recognized as having some endocrine defect, 26.7% are now paroled or discharged (Table 1), whereas the discharges and paroles from all the state institutions during the year ending June, 1931, were only 17.3% (Table 4). So that, any way this is viewed, this endocrine group has about 50% more patients out of the institution on discharges or paroles than is true of the general hospital population.

The data given above are not to be construed as meaning that endocrine therapy holds unrestricted hope of cure for hitherto hopeless forms of insanity. It does mean that correction of amenable endocrinopathies seems so far to have aided in the improvement of many of these cases. It does not mean that endocrine therapy

will replace the accepted psychiatric routine; it does mean that, where the evidence warrants, endocrine therapy should become a routine adjuvant to the psychiatric procedure.

It does not follow that because an individual has some mental disorder and is afflicted also with an endocrine dyscrasia there is necessarily any causal relation between the two, but the combination of endocrine stigmata with insanity is so numerous in Illinois institutions that it appears to be more than a matter of coincidence. The enthusiastic endocrinologist could interpret these results rather easily as meaning that we have found a cure for a considerable number of cases of insanity. The endocrine nihilist might argue that the treatment had been without effect and the results merely coincidental. The truth lies somewhere between these two extremes.

4. Paretics, postencephalitics, artiosclerotics and manic-depressives were considered as holding no hope for improvement from our restricted clinical viewpoint.

A few manic-depressives and postencephalitics were accepted in the first few months, but were thereafter excluded.

5. A limit of five years' residence in the institution was established as a maximum beyond which patients would not be accepted.

Our experience showed that patients immuned beyond five years—which is still only tentative and may be reduced to two years—are beyond hope of improvement within our field. Disorders of long standing, in the present status of our knowledge, are consequently not to be considered for future attempts at therapy, although a number of them were attacked and appear in the figures embodied in this report. It should be appreciated also, however, that a patient who has been institutionalized five years for mental disease associated with an endocrine dysfunction, has had the endocrine dysfunction, as he must have had the mental disease, in a pre-hospital form for a much longer period. Many cases, both of mental and endocrine disorder, for instance, have their inception at puberty or maturity, and develop only slowly to the stage where patient or family takes some definite action. However, available figures show that, of seven men accepted in the clinic who had been in the institution five years or more, not one was improved to the point of parole or discharge; and of twenty-four women, only one. Our funds are far too limited to per-

mit expenditure in a group which at present offers so little hope of success.

6. It was found, and is our present belief, that the prognosis for most cases beyond age 45 is poor.

The figures given above indicate that a rather large percentage of cases over age 45 were improved. These cases were of menopausal disturbance, which forms the principal exception to the age limit rule.

5. CONCLUSIONS

Since January 1, 1933, the work has been reorganized with the definite object of treating endocrinopathies among these patients in the warranted belief 1, that the addition of such treatment to the hospital's ordinary procedures will raise its proportion of discharges and paroles, 2, that it will accomplish the further purpose of reducing the hospital's population and consequently lower the cost to the state of maintaining these patients, and 3, that some of the treatment may become applicable to cases in private practice and so become preventive so far as the state is concerned.

As a result of the observations made in the preliminary phase of this work and outlined in Part 3 of this report, we have set up the following principles of technique:

1. Only young patients, less than age 45 (except a few cases in the menopause) and recently admitted, are accepted.

2. Patients are subjected to the usual psychiatric and general medical examination by the regular staff of the hospital.

3. Without disturbing any psychiatric regime instituted and with all non-endocrine conditions eliminated so far as possible, those showing endocrine stigmata are sent to the endocrine clinic. Paretics, postencephalitics, artiosclerotics and manic-depressives are, as above, excluded from this rule.

Endocrine stigmata considered by the ward officers are mainly: statural excesses or deficiency; disproportion between upper and lower measurements; dystrophies of skin and appendages; unusual hair-suit distribution or deficiency; peculiarities or excess or deficiency of pigmentation; obesity and its distribution; menstrual disorders.

4. The chosen patient is subjected to a general examination from an endocrine standpoint by the extramural member. Special studies—blood chemistry, blood count, urine

analysis and basal metabolic rate determination—are ordered at this examination, if recent ones are not already part of the patient's record.

5. The patient is seen at the next visit and a definite diagnosis made on the basis of the findings, considered in the light of the data accumulated previously, and a course of treatment outlined.

6. Check-ups are made at intervals of two to four months. The opinion of the doctor immediately in charge of the patient is solicited as to his or her condition. Henceforth the mental condition will be checked up by the staff every month. Treatment may be discontinued if improvement is not reported within a reasonable time, or if the patient or his family so desires.

By thus systematizing the work, we hope to make it more effective and even less expensive than heretofore. The rapid increase in endocrine data from research workers throughout the world will also undoubtedly add to its efficiency.

It is our hope that ultimately the state will see its way clear to establishing an endocrine ward or department at each of its major general hospitals for the insane, or even concentrate all endocrinopathies in one institution. The endocrine aspect of mental disease is certainly worthy of fuller investigation, and such centers could function as regional collection and publication points so that information gleaned in them could be distributed at medical meetings or in print to men in private practice. Such a policy should result in some preventive work being done where none is now attempted and should stimulate the interest of the general practitioner in this field of medicine. There is no doubt, at any rate, both from the data collected at Elgin and from other reports on the subject, that endocrine therapy offers definite promise of the alleviation of some cases of some forms of mental disease. A small section of so-called insanity undoubtedly will eventually be found due to endocrine dyscrasias and amenable to endocrine therapy.

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FOREIGN BODIES IN THE ESOPHAGUS*

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My part in this program is to tell how foreign bodies were removed from the esophagus before the esophagoscope was developed to its present degree of perfection. It took considerable ingenuity in those days, not only to devise a method of removing the foreign body, but to tell when and where it was present. The x-ray was in its infancy thirty years ago, and much had to be learned about interpretation of the x-ray plates. A few illustrative case records have been selected to show the methods in use at that time. Of course, such work is done now with an accuracy of diagnosis, and a refinement in technic that was not possible then.

It, perhaps, is well to occasionally go back in medical history and see how far we have progressed. It seems to me that we did very well before the esophagoscope came into use considering the handicaps, but it is also true that modern methods are a wonderful improvement and represent a great advance over the old methods.

The first case record selected for illustration was that of a small boy three and one-half years old. He had swallowed a jackstone on August 6, 1898, and was brought to my office in Averyville on that day. An examination failed to reveal any evidence as to the location of the foreign body. The youth of the patient prevented the obtaining of information which might have been obtained had he been older. He was sent to the St. Francis Hospital for observation, where he re-

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mained for four days. During that time he was carefully examined several times. There was no evidence of obstruction in the respiratory tract. The outside of the neck presented no abnormal enlargement. An examination of the throat with a laryngeal mirror failed to disclose any foreign body. He had vomited almost constantly, from the time the jackstone was swallowed until just before he reached my office, when the vomiting suddenly ceased. I concluded from this evidence that the jackstone had passed on into his stomach.

When he entered the hospital, instructions were given for him to be fed mashed, fried and baked potatoes which were to be followed with a full dose of cascara in the evening. While sitting at my office desk the next morning, I happened to look on the floor and saw a jackstone lying under the chair where the boy had been sitting the day before. It seemed reasonable to conclude that in the last attack of vomiting just before he reached my office, the jackstone had been expelled and had caught in his clothes in some way, and had then dropped on the floor while sitting in the chair. I tried to find out how many jackstones the boy had had originally in order to ascertain if they were all accounted for, but the father said he had either six or seven, and he could not remember which was the correct number, so we obtained no information from that direction.

After he arrived at the hospital, the Sister in charge said he ate a little mashed potato and drank milk freely. On the second day his bowels moved but he refused solid food. His throat was sore which was attributed to traumatism before the jackstone was supposedly expelled. On the third day his throat was much better, and on the fourth day he ate half a gingersnap and some banana in my presence, and swallowed the food without any effort. His father wanted to take him home and he was permitted to go with the understanding that he was to be brought back in a few days, if he had not entirely recovered. I have gone into detail concerning the little things that were observed, because that was the only way we had at that time for obtaining information.

When the boy was first brought to my office and again just before he left the hospital, I wanted to administer chloroform, the popular anesthetic at that time, and pass a bougie into the stomach, and make sure that the esophagus did not contain the foreign body as we hoped and had concluded. An anesthetic was necessary as the little patient was rather intractable. The parents objected to an anesthetic because they were afraid of it, and because they also thought, as I did, that the jackstone found in my office must be the one that had caused the trouble.

On the eleventh day after the boy had swallowed the jackstone, or a week after he had left the hospital, his father brought him back. He had eaten very little solid food until the eighth day, but from the eighth to the eleventh day he had persistently refused any solid food. He had, however, consumed quantities of watermelon and milk without any difficulty. His general health was excellent and he played around like a healthy boy. His father said his breath for three days had an odor "like

when a person gets a tooth pulled, and a piece of gum sloughs off." The boy had also been a little hoarse from the time he swallowed the jackstone. We reasoned that this hoarseness was probably caused by pressure on the recurrent laryngeal nerve, and the foreign body must, therefore, lie above the arch of the aorta.

It was evident that we had not got rid of the jackstone as easily as we had hoped. The father had heard of the Roentgen rays and wished to have a skiagraph (which was what we called it then) taken, thinking the process was similar to photography, and also trying to avoid an anesthetic in the making of a positive diagnosis.

Dr. Dombrowski, a prominent eye, ear, nose and throat specialist, had the only x-ray machine in the city so we took the little patient to him. Dr. Dombrowski's machine was a little mica plate affair, turned by hand, and the doctor told the father that in order to get a shadow of the jackstone, the exposure would require fifteen minutes, and that a child that young would have to be anesthetized in order to keep him still that length of time.

When the father was told that the taking of a skiagraph would require an anesthetic, he decided to let me do as I desired. Dr. C. E. Davis was called to administer the chloroform. An esophageal bougie was passed into the esophagus about two inches, when it met with an obstruction. I then passed my index finger far down in the throat, and found I could just touch the foreign body. I passed a dressing forceps along my finger, and caught the jackstone several times but the forceps slipped off. I then took heavy hysterectomy forceps and grasped the jackstone. Strong traction combined with lateral movements succeeded in dislodging it. There was a little transient hemorrhage. Recovery was prompt, and in four days he was eating everything he desired.

The jackstone had been in the esophagus eleven days, with plenty of time for the rounded knobs to ulcerate through the wall. It makes my hair almost stand up now to think of the dangers involved, but I was considerably younger then than I am now, and probably had more courage than discretion.

Another case was that of a little boy twenty-two months old who swallowed a safety pin on February 12, 1907. The next day he was taken to Dr. Farnum, who was then practicing in Brimfield. Dr. Farnum had a little mica plate x-ray machine, and with the fluoroscope he located the pin opposite the second rib. The pin was open with the point downward.

On February 14, he was brought to the St. Francis Hospital, and under ether anesthesia, I passed the coin catcher down through the esophagus. As it passed down I felt the coin catcher strike a metallic object, and pass on by it. When the coin catcher was partially withdrawn, I felt the pin with my finger in the baby's throat. The coin catcher caught in the region of the epiglottis and the coin catcher and the pin were withdrawn with considerable difficulty.

The baby was sent home in two days. About the fourth day after he left the hospital, he developed a double pneumonia and a mediastinal abscess, which ruptured into the pleural cavity. Dr. Farnum resected

a rib and drained the pleural cavity. The baby's further recovery was uneventful.

The next patient was a woman fifty-one years old who, while eating her dinner on August 22, 1913, felt a sharp pain in her throat that persisted. That evening she came to me, and by passing my index finger far down in the throat, I could feel a piece of bone. With my finger as a guide I passed a sponge forcep down in the throat, and grasped the bone and removed it. It proved to be a piece of chicken bone, and the relief was immediate and permanent.

A girl fourteen years old, on August 28, 1917, was riding in a buggy and had a pin in her mouth. The buggy went over a rough place in the road when she accidentally swallowed the pin. At first it seemed to choke her, but after a short time it did not bother her in any way. After awhile it began to choke her again. This choking occurred intermittently, and she went to Dr. Perry B. Goodwin, who was then practicing in Summum, Illinois. The x-ray apparatus had been developed considerably by that time, and Dr. Goodwin took her to Lewistown where an x-ray plate, which was made by Dr. C. E. Howard, showed the shadow of the pin in the right side of the neck, about an inch above the clavicle. Dr. Goodwin then brought her to Peoria. A fluoroscope examination was made which showed the pin still lodged in the neck. Stereoscopic x-ray plates were also made, which I regret were destroyed a few years ago. I passed my finger into her throat and felt the pin attached to the anterior wall of the esophagus just beneath the glottis. I passed a bristle probang into the esophagus and withdrew it expanded. It brought the pin with it.

Another patient was a little girl five years old. On May 7, 1919, she accidentally swallowed a tin whistle, about the size of a twenty-five cent piece. It seemed to "stick somewhere in her throat." Dr. John Vonachen was called and that afternoon Dr. M. D. Spurck and he tried to remove it. They did not succeed and finally decided to have an x-ray plate made. The plate seemed to show the whistle in the stomach. It was decided to wait a few days and, if the whistle did not pass out of the stomach, it would be removed by a surgical operation.

On May 11, she was given some barium and water by mouth. Under the fluoroscope, the barium mixture was seen to pass into the stomach and seemed to surround the whistle. I was asked to remove the whistle the next morning.

On May 12, an incision was made through the upper abdominal wall. When the stomach was examined, to our great surprise we could not find the whistle. The duodenum was palpated and also the small intestines, cecum and colon. We did not find the whistle. The incision was closed with temporary sutures and the patient was taken to the x-ray department of the hospital. The x-ray showed the whistle in the left lower abdomen. The patient was taken back to the operating room and the incision reopened. The whistle was found in the sigmoid and it was pushed down into the rectum where it was removed through the anus, by an assistant.

It was evident that the whistle was in the transverse

colon when the x-ray plates were made the evening before the operation, and either lay in front of or behind the stomach. We also learned then the lesson that later became known to the entire medical profession, that a foreign body that passes through the upper portion of a normal esophagus will probably pass through the entire gastro-intestinal tract.

A little girl four years old, on July 23, 1920, swallowed a small metal toy elephant. Dr. A. S. Plummer was called and thought that the foreign body would probably pass into the stomach and out through the rectum. He cautioned the family to let him know if any untoward symptoms developed. On July 25, the parents brought the little girl to Dr. Plummer and reported that she refused all food except a small amount of ice cream. An x-ray plate showed that the foreign body was lodged in the esophagus opposite the upper portion of the sternum just below the level of the clavicle. A rubber stomach tube met with an obstruction six inches beyond the lips, and would not go any farther. I could not reach it with my finger and was unable to grasp it with forceps with the patient under ether anesthesia.

We decided that we would have to perform an esophagotomy, so on July 26, an esophageal bougie was passed and an incision was made down to the esophagus. The esophagus was incised and by passing my finger into the incision, I could feel the upper edge of the foreign body. I made two or three attempts to grasp it with forceps when I felt it slip away and pass down beyond my reach. A bougie was passed into the stomach without any difficulty. The incision was closed, and a Kanavel stomach tube passed into the stomach. An x-ray plate showed that the foreign body was in the stomach. The patient was fed through the stomach tube for seven days. She made an uneventful recovery and passed the "elephant" from the rectum on August 5.

The last case to be reported may not fall within the limitations of the title of this paper, but it is so closely akin to it that it may be worth reporting. The patient was a young man, nineteen years old. While eating watermelon, on September 16, 1899, he accidentally swallowed a sand burr, and said he could feel it stick in his throat when he swallowed. I could not feel it with my finger at first and a laryngeal mirror failed to reveal it. I finally passed my finger under the epiglottis and felt the sand burr just inside of the glottis. I could just touch it with my finger. It was a problem to devise a way to remove it. At last I took a dull uterine curet with a long, flexible shank and bent the shank to suit my purpose. I passed the curet to the burr with my finger as a guide, and manipulated until the burr lay in the fenestra of the curet. With careful traction I drew the burr out from under the edge of the glottis, until my finger could hold it firmly in the fenestra of the curet. It was then easily removed.

It was fortunate for us in those early days, that the narrowest portion of the gastro-intestinal tract is in the upper portion of the esophagus. The histories of the above cases show that we frequently obtained information of the presence of a foreign body by being able to

feel it with the index finger passed far down the throat. There were two instruments that aided us very much in the removal of the foreign bodies. One was called a bristle probang. The instrument was passed into the esophagus below the foreign body with the bristles extended. By pulling on a rod going down the center of the shaft of the instrument, the bristles were expanded like an umbrella. Then the instrument was withdrawn, and would frequently bring the foreign body with it. The head of a pin or a piece of bone would very likely be caught in the bristles and be removed.

The other instrument was called a coin catcher. It consisted of a small triangular bucket with a rod attached to the bottom of the inside of the bucket by a swivel joint. The triangular shape of the bucket permitted it to pass below the coin in the esophagus, and when the instrument was withdrawn, the open top of the bucket would catch the coin and bring it out.

Of course we worked in the dark with these instruments and they were not exact or precise. They have been justly superseded by the esophagoscope, with its accompanying instruments of precision. The x-ray is now a wonderful aid in giving the location and dimensions of the foreign body.

I read an article in a surgical journal a few days ago that Kussmaul, in 1868, was the first to realize esophagoscopy by passing a rigid straight tube down the esophagus of a sword swallower of Freiburg, and Mikulicz, 1881, showed that esophagoscopy was a feasible procedure, but for the next thirty-five years nothing much was done about it. While the esophagoscopists were deciding what to do about it, we went ahead, and did the best we could with the instruments at our disposal.

FOREIGN BODIES IN THE ESOPHAGUS*

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It is the purpose of this paper to emphasize briefly the more important present day methods of diagnosis and removal of foreign bodies in the esophagus. These will be illustrated by

a summary of fifty consecutive cases from the writer's practice. No attempt will be made to enter into any great detail in this paper.

History. When a patient presents himself to the physician, either in his office or at the hospital, he usually gives a history of a vague sensation, a discomfort or some difficulty in swallowing. He may or may not give a history of swallowing a foreign body. The physician must then ask himself and answer:

1. Is a foreign body present?
2. In which part of the esophagus has it lodged?
3. Is an esophagoscopy indicated?

A subjective sensation of foreign body may be constant, but more often it is present only on swallowing. Painful swallowing, inability to swallow or drooling may be present or absent. If there is pain, it may be substernal or extend through to the back. If the foreign body is sharp, it may cause pain or pressure over the site of the point or by pressure over the opposite side of the neck. Thoracic foreign bodies may, for a time, cause only a discomfort above the sternal notch.

Excessive salivary secretion and drooling are associated with impaction and consequent occlusion of the esophagus. This secretion frequently overflows into the larynx and may be the cause of pulmonary disease.

Coincident esophageal disease must always be considered when a foreign body is arrested in the esophagus. Trauma, laceration, ulceration, acute or chronic esophagitis, spasmodic, congenital or acquired (lye, etc.) stricture, stenosis caused by compression of mediastinal growths (tumors, glands, etc.), aneurysm, diverticulum, esophageal neoplasm (malignant or benign), varix, paralysis, hysteria and other diseases, may be an underlying cause for the arrest of the foreign body.

Fluoroscopic Examination. The problem for the roentgenologist is the location of the radio-opaque foreign body rather than that which is radio opaque. It is simple to determine that a coin, a disc or an open safety-pin lies with its greatest diameter in the coronal plane of the body and that, if it were in the larynx or trachea, it would lie in the sagittal plane. Other objects may require a lateral or oblique position in fluoroscopy to determine with certainty whether they are in trachea or esophagus. A

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few swallows of some opaque mixture would settle the diagnosis at once.

To determine presence and location of radio-non-opaque foreign bodies, sometimes a thin barium or other mixture and at other times a very thick mixture is required. A capsule, 5 to 15 grains, filled with opaque mixture will at times be arrested, momentarily at least, when the ordinary mixture would pass on with little or no hesitation.

Most foreign bodies are arrested at the upper thoracic aperture where there is a physiologic narrowing.

Roentgenograms. Roentgenograms may then be made with or without opaque mixture, either as a liquid or in capsule. Any evidence of associated esophageal disease may then be recorded in one or more plates for present or future study. Urgent cases may be met in which there is no time for fluoroscopy or roentgenograms. An esophagoscopy must be done at once.

Esophagoscopy. After taking into consideration the history, the fluoroscopic and roentgenological findings, then it must be determined whether or not an esophagoscopy is necessary, whether or not the patient is in condition to esophagoscope. A patient in shock or with a very high temperature and critically ill, is a bad risk. It is best to wait until the danger has subsided. There may have been "blind and ill advised attempts at removal." Either such attempts or the foreign body itself may have caused a traumatic esophagitis, septic mediastinitis, a cervical cellulitis or a gangrenous esophagitis. In any such case removal of a small foreign body would be next to impossible until some of the edema, swelling, etc., had subsided. However, the foreign body must be removed as soon as possible. When removal of the foreign body has been decided upon, only the direct method with electric lighted esophagoscope guided by the eye is worthy of any consideration. Any blind methods are fraught with great danger.

Removal of foreign bodies by other methods. Blind bougieing, or blind passage of any instrument into the esophagus is extremely dangerous as has been mentioned. Since there may be a coincident disease of the esophagus or adjacent organs as the cause of arresting the foreign body, such methods frequently produce

more damage than the foreign body itself.

External Esophagotomy has never been performed at Chevalier Jackson's Clinics. If the foreign body has passed from the pharynx into the esophagus, it may be removed over the same channel or pass into the stomach. The mortality of external esophagotomy is from 20% to 42%, while that of esophagoscopy is less than 2%. Such an operation is only useful in the cervical esophagus. Cases have been reported in which the foreign body has passed below the cervical esophagus during general anesthesia and, therefore, not found at operation.

SUMMARY OF CASES

Fifty consecutive cases of foreign bodies in the esophagus are summarized.

RADIO NON-OPAQUE FOREIGN BODIES

Type	Cases	Ages of Patients
Food (general).....	3	25 to 39 years
Meat.....	2	61 to 72 years
Toast.....	1	50 years
Cracker.....	1	27 years
Wood.....	2	5 and 19 years
Popcorn (husk).....	2	27 and 54 years
Apple seed (husk).....	1	36 years
Prune seed.....	1	33 years
Grapes (whole).....	1	60 years
Beef bones.....	2	45 and 49 years
Pork bones.....	2	18 and 46 years
Chicken bones.....	8	17 to 65 years
Fish bones.....	7	22 to 58 years
Glass.....	2	30 and 48 years
Porcelain.....	1	53 years

RADIO OPAQUE FOREIGN BODIES

Type	Cases	Ages of Patients
Marble.....	1	9 years
Badge (pin clasp).....	1	10 months
Overall button.....	1	2 years
Can opener.....	1	4 years
Clock key.....	1	2 years
Carpet tack.....	1	29 years
Coins (penny).....	4	2 to 3 years
(nickel).....	1	2 years
Open safety pins.....	3	9 to 24 months

DURATION OF SOJOURN OF FOREIGN BODY IN ESOPHAGUS

1 to 6 hours..... 14 cases	1 week..... 1 case
7 to 18 hours..... 10 cases	2 weeks..... 2 cases
1 day..... 8 cases	6 weeks..... 1 case
2 to 5 days..... 10 cases	3 years..... 1 case

X-RAY EXAMINATION DEMONSTRATED

Spasm in 20 cases
Stricture in 5 cases
Occlusion in 2 cases
Negative in 13 cases

FOREIGN BODIES WERE ARRESTED IN

Cervical Esophagus in 32 cases
Middle Thoracic Esophagus in 2 cases
Lower Thoracic Esophagus in 3 cases
Not localized in 13 cases

CONDITIONS FOUND AT ESOPHAGOSCOPY

Laceration or abrasion.....	1 case
Laceration and stricture.....	4 cases
Laceration and perforation.....	2 cases
Laceration and ulcer.....	3 cases
Perforation (small or large).....	7 cases
Ulcer.....	4 cases
Stricture.....	3 cases
Stricture and carcinoma.....	1 case
Esophagitis, acute.....	2 cases
Suppurative mediastinitis, etc.....	2 cases

REMOVAL OF FOREIGN BODIES

Foreign bodies passed into the stomach in 12 cases
Foreign bodies removed by esophagoscopy in 38 cases

SUMMARY OF CASES

It seems logical to conclude, as others have done, that more than 80% of the cases of foreign body in the esophagus are due to carelessness on the part of the patient. Very young children play with many sorts of small objects which should not be within their reach. Too frequently these reach the mouth and are either aspirated or swallowed. The toothless age, with "artificial hard palates," have little sensitiveness to bones and other objects which may become foreign bodies. Those people from 20 to 40 years of age are either in too much of a hurry or are just careless. And lastly, some few cases have a definite coincident pathology in the esophagus.

CONCLUSION

1. We should always remember the possibility of a pre-existing esophageal disease when a foreign body is arrested in the esophagus.

2. Blind probing and blind methods of attempting removal of foreign bodies from the esophagus are fraught with great danger. They should be excluded forever from our armamentarium.

3. Foreign bodies in the pharynx must be skillfully dealt with for fear of complicating a simple case and forcing the foreign body downward into the trachea or esophagus.

4. Fluoroscopy and Roentgenograms are the only reliable methods for localizing an Esophageal Foreign Body before esophagoscopy.

DISCUSSION ON PAPERS OF DRS. COLLINS AND SNELLER

Peter T. Spurck, (Peoria, Illinois): I certainly enjoyed Doctor Sneller's paper immensely, relative to the advance in bronchoscopy in the last few years. I know

of nothing that is of more importance to the internist or to the general practitioner, who has a patient that has swallowed some foreign body, than to feel he can rely upon a competent bronchoscopist to remove this foreign body in a rapid and efficient manner and thus avoid fatal results.

We have learned that during the routine x-ray examination of a foreign body, if there is any question of whether this foreign body may lie in the esophagus or in the upper trachea, this can be differentiated by placing the patient in a semi-lateral position, and the swallowing of an opaque barium meal will readily disclose whether there is an obstruction in the upper esophagus.

We have also used Iodeikin capsules which on account of their intense opacity could be easily visualized at any of these obstructive points.

I think this paper was very timely.

Dr. G. A. Dicus, Streator: It was gratifying to me recently when a ten months old child was brought to the office after swallowing a kernel of corn. It went not into the esophagus but the trachea. I brought her to St. Francis Hospital, and it was very satisfying to see how Dr. Sneller removed that grain of corn.

Carl Black (Jacksonville): These are very interesting papers and very important. I would not have anybody think for a minute I don't appreciate the advancement which has been made in this field. However, in these days, when we are reading so much about George Washington's beautiful teeth made by Greenwood, how he carved them out of ivory, I call your attention to the fact that surgical literature shows at least five cases where individuals have swallowed their teeth which passed completely through the gastro-intestinal tract. We should not be too much excited. The family is excited and the patient is excited but it is no time for the doctor to be unnecessarily excited except for the one thing that he might be cheated out of a job.

Maurice I. Kaplan (Chicago): I wish to call to your attention a method we have been using at Mount Sinai Hospital, Chicago, for the localization of foreign bodies and other lesions of the esophagus. The method I am about to describe has taken preference over the capsule method that we had used for a number of years. The stock mixture of equal parts of chocolate malted milk and barium sulphate (by volume) which is kept on hand for other barium studies, is used. A thick paste is prepared using two tablespoonfuls of water and two tablespoonfuls of the barium malted milk mixture. This paste is spread on one graham cracker, another cracker is placed on top of this and a sort of a sandwich is had, similar to the ice cream sandwiches sold in the streets. The sandwich is allowed to stand for a short time while the moisture is absorbed and the sandwich is ready for use. The patient is told to take several bites and chew this real well and swallow, after several bites have been chewed up and mixed with the saliva of the mouth. I find that this method produces a mass that goes down very slowly through the esophagus and sticks to the wall of the esophagus much better than the capsule and an ordinary thick barium paste. It is easier to handle in the dark fluoroscopic room; no messy spoons to be poked around in the dark to find

the patient's mouth and the patient likes this mixture much better than the paste.

I have found on several occasions that the capsule will go down while the sandwich of the barium and graham cracker will stop and outline the foreign body or bring the lesion to view.

There is a drawback in the use of the sandwich in the edentulous patient. These patients who have no teeth can easily soften the mixture by munching slowly and then swallowing. We have used this method at The Mount Sinai hospital for some time and I recommend it to all of you, until some day an enterprising baker will incorporate the barium in a cracker and put it on the market so that one can keep a supply on hand and feed these to his patient with water and use it instead of the messy barium powder mixtures.

Dr. Collins (closing the discussion): As I stated, my purpose was to show you how we removed foreign bodies in the esophagus in the early days with the crude instruments at our command. Every practitioner in this part of the state breathed a sigh of relief when Dr. Sneller came with his instruments and showed his skill and ability to use them.

Dr. Sneller (closing the discussion): Dr. Spurck brought out an important point about the use of opaque mixtures in differentiating between foreign bodies lodged in the trachea and those lodged in the esophagus. In a case of foreign body in the trachea, any opaque mixture which is swallowed, naturally would not be arrested by any foreign body if it were not in the esophagus. Therefore, the conclusion would easily be made that the foreign body was not in the esophagus.

Dr. Black mentioned the fact that we should not be in a hurry. A good many cases come into my office with a history of foreign body in the esophagus and have some difficulty in swallowing. If there is no apparent urgency, I wait a few hours to a few days before deciding upon an esophagoscopy. However, with most larger foreign bodies, particularly those with sharp edges and points, I do an esophagoscopy shortly after a careful x-ray study of the case has been made. If such foreign bodies are not removed early, they will lead to ulceration, esophagitis, or even at times, to a mediastinitis and then they may have a fatal outcome.

An example of such a case: A patient, 9 years of age, swallowed a marble. It became impacted in an old lye stricture. There had been some manipulation before the patient had come to the city, but poor circulation in the stricture, in the presence of the impacted foreign body, and also in the presence of infection, brought about a serious complication within 24 hours after the onset. In spite of removal of the foreign body, the patient died at the end of five days with a gangrenous mediastinitis and a left chest full of pus.

External esophagotomy, in Dr. Collins' hands, was remarkably successful. Yet the mortality throughout the country is from 20% to 42%. The foreign body may slip downward before the operation is completed, and, therefore, such a serious operation will be useless.

I believe Dr. Black is absolutely correct about waiting for some foreign bodies. When an open safety pin is in the stomach we may wait, but if it is lodged in the

esophagus for 12 to 24 hours and has not moved, I believe it should be removed by esophagoscopy under the guidance of the eye and removed early.

Dr. Kaplan's idea, I think, should be followed by at least some of the Roentgenologists.

RELATION OF THE HEALTH OFFICER TO THE COMMUNITY*

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LA SALLE, ILL.

This subject was accepted by the writer with the idea of trying to codify present ideas rather than to attempt to propound any new theories.

Many papers are written on the subject of "The Relation of the Health Officer to the Physicians," which limits very much the scope of the discourse. This subject must, however, include the practicing physicians, because they form an integral and important group in any community. In fact they form the most important group in the community with which the health officer has to deal. Many whole time health officers look upon their communities as composed of groups, and analyze their problems with reference to the welfare and needs of these groups. I knew a health officer, who a few years ago, was invited to leave his community, where he had been quite successful, to become health commissioner of a larger city, at an increased salary. He was offered a contract for only one year, but demanded at least a three year tenure, because, as he said, at the end of one year he would just be getting a comprehensive grasp of the population complex or the community background, and the real needs of the community, and how best these needs could be attained.

This health officer was absolutely right in weighing in the balance his present success and reasonable security of position, against an untried field of endeavor, even with increased pay, but an unsuitable and unfair tenure of office. Suffice to say this man was given a three year contract, made good in the new field, but needed the entire time to reorganize, harmonize, and coordinate the various groups and build up an efficient health department. Therefore a reasonable tenure of office is among the first considerations that a community owes its health

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officer and also itself. All this, of course implies that the health officer shall be worthy of the confidence and trust imposed in him.

We often listen to papers read at our health meetings, in which the author is extolling the virtue of some health practice he has developed in his community. To him its development may have been comparatively easy, but we leave the meeting wondering how we could possibly accomplish the same thing in our own community. We seriously analyze all factors and decide that for us, our time, energy and money can accomplish much more in an entirely different field of endeavor. His may be a wealthy suburban community, in which the sanitary problems have all been solved, including the water and milk supplies. Such people are apt to be highly intelligent, with a consequent low birth rate and low infant mortality rate. These people can be expected to have instead a so-called high "girth" rate, with a consequent high adult sickness rate, due to the stress of living as well as the effects of luxury and ease.

Manifestly this health officer's sanitary duties would be one of mere routine to check standards occasionally. He probably would turn his attention to health promotion in the schools and high schools, to the periodic health examination, the development of special clinics, such as heart, mental, cancer, etc. He would, of course, also attempt to control the communicable diseases, and recommend the various up-to-date immunization procedures. But in all this could any one imagine the idea of gratuitous services to the public or from the physicians, in this type of community. Here free services would seem an absolutely foreign thought, and that all these problems would have a much different approach here than in some other community. This health officer might, conceivably, have to deal with problems that most of us know little about, such as a large Christian Science group, or the followers of chiropractic, physical culture or other groups or cults, that frequently infest, like a disease, the so-called intelligentsia. In fact most health officers may not be able to adjust themselves at all to this type of community. It may require a man of special temperamental fitness to make a success here.

On the other extreme a community may be so backward in sanitary progress, or so poor,

that the fundamentals of sanitation may be major health problems for a number of years. The racial make up, the type of industry, climate and many other things may be weighty factors. All these will determine the health activities advocated and the approach to their solution. Here the free dispensaries and clinics may be necessary if any progress is to be made in saving human life.

Even within large cities, containing all kinds of groups and classes, special problems are solved in different ways. New York city solves its diphtheria immunization problem somewhat different from that of Detroit, and Chicago has yet another way. Dr. Vaughan of Detroit stresses the house to house canvass of the public by many nurses for several months, and the payment of the physicians by the health department for those who can't afford to pay. He also succeeded in stimulating, by special courses of lectures, the public health consciences of the physicians in the control of communicable diseases. In other words he fostered and bettered the relations between himself and his department and the physician group of his community. Dr. Bundesen of Chicago, while stressing this feature also, yet found it necessary, to reach a large special group, to enlist the aid of the Catholic clergy, and to establish free clinics and to even organize traveling clinics to go to the very homes of these people. All this seemed necessary to get past the resistance, suspicion and poverty of this group.

Dr. Gillespie of Peoria has abandoned free toxoid clinics—the physicians in his city having agreed to cheerfully immunize all who come, charity as well as pay, so that the free clinic is unnecessary. In one small city the school children were prevailed upon to bring to the school as much of a standard fee as their parents could afford. The total received amounted to an average of fifty cents each. This was paid to the physicians and a very high percentage of the grade school children were immunized to diphtheria. But this does not reach the pre-school group, which it is most important to reach. In the community of the writer, by agreement with the physicians the health department immunizes in preschool clinics, but pays the physicians to immunize the school groups for both smallpox and diphtheria. And so the methods vary almost *ad infinitum*.

The health officer has a great responsibility in his community and to his community. If no epidemic of devastating importance occurs the community is considered fortunate; but if one does occur some one must be blamed, and it is always the health officer. His foresight must equal his aftersight. In fact he must continually foresee and forestall to maintain his status quo. And unless he is a good advertiser or has a good press agent, the public may never appreciate his valuable services.

An illustrative case occurred in an eastern city a few years ago. In this city there were signs for many months that all was not well with the city water supply. Finally a terrible epidemic of typhoid fever occurred causing hundreds of cases of illness and taking many lives. There also remained as an aftermath, more than twenty typhoid carriers and numerous persons with impaired health, so that damage suits and judgments against the city ran to nearly two million dollars. Sure the health officer was dismissed for failure to recognize the signs, to foresee its results, and to take proper preventive measures. An interesting fact in this connection was that the county health officer lived in this city, had authority over the county, but not over this particular city of the county. He recognized the danger, warned the local department, and boiled the water used by his own family. He was severely censured after the epidemic, because he had not become a crusader, cried his message of warning from the house tops and forced some attention to the matter. But if he had, how about his meddling if the epidemic had not occurred? Needless to say that the law governing county health departments in this state was changed, giving the county health officer authority over such matters in the future.

Therefore, it is apparent that the prevention of disease is still the first duty of a health officer to his community. This not only includes the so-called communicable diseases, but all other diseases that harass mankind and destroy his happiness and his life. This may well include the allied field of health promotion, for this is nothing else than the teaching of how to develop and maintain a sound and vigorous body for as long a period as possible, and therefore to limit or prevent disease. This does not mean that the health officer and his staff shall

ruthlessly enter any given community and by ordinances, or by arrogance or aggressive measures disregard established habits or customs of that community. It does mean, however, that by his very position in the community he must endeavor to accomplish definite good. This is especially incumbent and expected of him where disastrous epidemics may occur or the health and lives of many people may be endangered. There are times when the rights of the people as a whole transcend the rights of any particular group of the community.

The purification of the water supply and the requirement for the abandonment of private wells, a milk pasteurization ordinance, or the adoption of any new sanitary ordinance will offend certain elements or groups, but is necessary for the common good. Likewise the adoption of adequate measures to immunize the public against smallpox and diphtheria may offend other groups, including the medical profession, or only certain members of it. Usually some agreement can be arrived at, but it is exceedingly difficult to satisfy every single member of any group. The majority is, however, usually fair, and the majority should be satisfied before any program is carried out. Sometimes the health officer can make haste by going slowly and allow for changing opinion within objecting groups, yet some of this work must be done. In the case of immunization it must be done either by the physicians, or by the health department or by a cooperation of both, or in time the health officer must answer to public opinion for the failure. This is true of other measures for the public welfare—the health officer must somehow get it done or answer to public opinion sooner or later. Therefore the health officer needs the sympathy, patience, cooperation, and encouragement of all groups in the community, to the end that the whole community may progress in public health.

Less urgent, however, is the public health education of the masses, special groups, and in the schools; but extreme caution, tact and care is here necessary. Too many health articles or radio talks or too much usurpation of the rights of the school teacher to teach health in her own way, may well tread on too many toes and center too much enmity on the health officer at one time for him to withstand. I once knew an enterprising, but aggressive health officer in

a fairly large mid-western city to lose his job because of too much publicity. It is better to submerge oneself somewhat behind the active public health groups of a community than to stand out in front too much, I do not mean to say that public health education is not important, but it is better for him to face always in the right direction, as he understands the right, and be content with few converts at a time. Gradually, if he is right, whole groups will swing to his side, and his program will be accomplished. I have seen it take two or three years or longer for superintendents of schools to consent to alter school curriculums to include some idea of the health commissioner, or for school teachers to change from luke warm to enthusiastic advocates of certain health practices or teaching. Likewise for medical societies to agree to an adequate immunization program, or for councils to pass a milk pasteurization ordinance, etc.

It now becomes apparent and manifest, that if a community is to get the maximum health benefits, its health officer must be specially trained. He must be able to read the signs of impending epidemics, and know how to take the proper action. He must be able to gather vital statistics, analyze them, and direct special attention in the direction of greatest need. He must be able to cooperate with the component groups of his community, and skilfully direct their mutual relations for the best interests of themselves and for all, and if certain diseases are to be still further reduced in prevalence, and the public health further promoted, long time and careful planning for his community is demanded.

No general practitioner can adequately or properly do all these things, without special aptitude, thought and training, no more than he can adequately care for the eye, ear, nose and throat specialty without special training. Public health is a specialty just as much as any other specialty, and to get the best results a whole time, specially trained man should be in charge. More communities should therefore demand trained, whole time health officers, and where these communities are too small to justify the expense, provision should be made for combinations of communities, so that trained supervision can be employed.

People's habits and customs can not be

changed over night. "Evolution and not Revolution" should be the motto. Many times in our schools, parent teachers associations, women's clubs, and other groups we must educate and reeducate. Public health like medicine constantly changes, new knowledge is born, and new emphases must be placed here and there, and it takes special study and constant application to keep abreast of this field.

One of the chief difficulties and criticisms, by our various groups, is our inability to show rapid and demonstrable results. Against all this a health officer needs to be fortified with facts and figures covering periods of years, rather than single years, and by a knowledge that he is proceeding in the direction advised by experts in the public health field. Vision, knowledge, perseverance, patience, tact and fairness to all groups, are all important assets of a health officer in relation to his community.

SUMMARY

As a background to serve a community, the health officer must understand the population complex and the component groups of his community.

He must then select his program to best serve the needs of his particular community. Even the approach to similar programs may differ radically in different communities. What may be mere routine in one community may of necessity be a major program in another.

The health officer has a great responsibility and he needs the sympathetic understanding and hearty cooperation of all groups in his community.

The health officer is a specialist in a special field. He must recognize signs of impending epidemics, and plan long time programs. For this reason he needs a reasonable tenure of office.

He of all men needs a rare combination of vision, knowledge, courage, patience, tact, and a fine sense of fairness to all groups of his community.

DISCUSSION

Dr. E. S. Gillespie, Peoria: In discussing Dr. Ailes' paper it seems appropriate to consider the relationship of the Health Officer and the City Health Department with the health instructions and health supervision of the child, or the School Health Service.

My study of this subject has convinced me that the health supervision of the school child, like all other ages, rightly belongs to the Board of Health, and that the health instruction rightly belongs to the Board of Education. Teachers are equipped by experience and

training to teach health and hygiene. Health Officers are convinced that the health department is better equipped to give health supervision because they furnish a 24 hour service 365 days each year, as compared with a 190 to 200 days of 6 hours each in the schools and the Board of Health is held responsible for the health supervision of all the citizens in the community.

I want to quote a few paragraphs from a report of Dr. James Roberts of Hamilton, Ontario, outlining the way the amalgamation was handled in that city.

"In looking back over recent years of my experience as Medical Officer of Health, I find the discussion as to whether medical inspection of schools should be under the supervision of the Board of Health or Board of Education to have been of annual, nay, even of perennial interest. At times reasonable and dispassionate, the argument has occasionally waxed warm and even acrimonious.

"Permit me at the outset of my remarks to call your attention to a fundamental consideration which has not been sufficiently emphasized in the presentation of our problem to those who are not nurses and doctors, but which is of paramount significance to a proper conception of what school hygiene, looked at from a broad and really worth while viewpoint, comprehends. We refer to the difference between 'health supervision' and 'instruction in health'. The former, for the infant, preschool child, school child, adolescent, and adult is preeminently the duty of the official health department. The latter is the function of the educational authority. To except the school child arbitrarily from any comprehensive program of the Department of Health can be defended on no grounds nor by any process of sound reasoning. Health instruction is the business of the Board of Education. Health supervision and protection is the responsibility of the Board of Health and the Medical Officer of Health. . . .

"Both academically and strategically the teacher is better equipped to carry on the teaching of health and hygiene in the schoolroom than the nurse. . . . Not only would I insist on the school authorities seeing that the teacher's training is adequate to insure that this type of instruction shall not be carried out in a perfunctory or half-hearted manner, but that in all the educational curricula of the country the teaching of health and hygiene shall be so incorporated as to invest them with the importance which their influence on the future of our citizenship demands. . . .

"Corrective physical education has become as indubitably and acceptedly a part of the school program as manual training, vocational guidance or domestic science or any other of the so-called fads which once upon a time aroused alike the criticism and the depreciation of the taxpayers. Corrective gymnastics, postural exercises, orthopedics, rest, nutritional clinics, sun baths, open air schools, etc., have become indispensable adjuncts in our efforts to insure the ability of the child to attend school and to make the most of his educational opportunities. In the evolution of reorganization of existing school health services, whether under the Medical Officer of Health or School Medical Officer as

the case may be, these services are essentially medical as to their establishment and successful maintenance. . .

"The Medical Officer of Health takes the stand, logical and convincing to himself, no matter how irrational it may seem to others, that the necessary visits to the school in connection with the control of communicable diseases offer exceptional opportunities at the same time for search and investigation into the causes which later in life lay the foundation for physical and mental ill health, and that inasmuch as the schools have the children under observation for only 5 to 6 hours per day and for only 195 of the 365 days in the year, any program of health supervision undertaken by the school authorities must of necessity be partial, isolated and in most cases illy coordinated with the scheme of preventive medicine which is in operation throughout every day in the year, and which, moreover, is often responsible for some of the best and most intensive efforts of the Health Department during those months of the year when the school health service, no matter how urgent the necessity, has entirely ceased to function. It is obvious, therefore, and to every one, that where health work, even to the extent of overlapping the work of the Health Officer in the control of contagion is carried on, that official becomes legally responsible for any miscarriage or neglect of duty and must not only carry on a campaign against infections in the public schools but as is the case in this city at the present time, must organize and carry on a similar crusade in the private and parochial schools. . . .

"We are, in fact, at the present time, and have been for some years past, in the anomalous position of providing a dental service for both public and parochial schools, a nursing service for the control of communicable diseases in both classes of schools and a service for the correction of physical defects in the home, or, in other words are carrying on a generalized nursing service covering the entire area of the city. . . .

"Just here it would seem opportune to say a few words setting forth the advantages of such a nursing service. Accompanying my report is submitted a map showing the nursing districts which after due regard to density of population and other details necessary to be considered would, in our judgment, be adequate to insure the successful working out of the proposed amalgamation. These districts are so arranged that the district nurse in each case may take care of all children, school and preschool in her area, not only with respect to her work in the schools, but will be able to assume responsibility for attendance at clinics and to follow up work in the homes. Contacts from contagious diseases and absentees from schools on account of presumptive contagion or other disabling causes can be visited without overlapping, as the district over which any particular nurse assumes health supervision contains all that portion of the city from which the attendance at school or schools is derived. . . .

"That a system of generalized nursing is the ideal in the field of public health is the opinion of those who have made a comparison of both specialized and generalized systems and who are qualified to make a pronouncement. . . .

"It cannot but appear self-evident to anyone who has made a study of our health administration as its outlook has expanded and its development has progressed by leaps and bounds during recent years, that we are not dealing here with merely an educational reform or a social problem, but with a world wide realization of the importance of preventive medicine in the conservation of life and health. For this reason it would seem patent for the Health Officer to undertake whatever measures are reasonably available to promote the health of the entire community at all times and for those of any age. He cannot without laying himself open to the charge of inconsistency assume responsibility for the health of children up to 5 years of age, then turn them over to another official until they are 16, and subsequently without adequate records in his possession concerning the events in their physical and mental career at school, be expected to take the necessary steps to insure for them a healthy manhood and womanhood. . . ."

We all, whether health or school officials, doctors, nurses or lay persons, take a conscious pride in the great child hygiene movement, the impulse of which has travelled round the world and the influence of which has been felt to a greater or less degree in every city, town, and hamlet to which the gospel of hygiene and sanitation has penetrated. We all fully realize that as never before in history the present is the era of the child, and that medical inspection of schools, no matter by what authority carried on, has made an outstanding contribution to the betterment of the status of our children. In the future, as in the past, no matter what may be the decision of the city's representatives on the proposed amalgamation, our desire will be to cooperate to the best of our ability with School Boards or other agencies engaged in health and social work, to the end that we may forget our personal differences and consider only the child. Only by the assumption of such an attitude can our efforts be successful and the children be assured of a square deal.

So in closing this discussion I want to repeat that I am thoroughly convinced that the Health Department should be held responsible for the health supervision of the school child and the Board of Education be held responsible for his health education.

ETIOLOGY OF OCULAR DISEASE*

HARRY S. GRADLE, M.D.

CHICAGO

The search for the cause of diseases of the eye is probably one of the most difficult points that the oculist has to contend with and in this phase of the subject, he is not sufficient or competent to handle the matter alone. There are certain diseases of the eye that are purely local in nature as well as local in origin and these are usually of less serious import than those dis-

eases of the eye that are due to systemic disturbances. In general the etiology of ocular diseases may be classed as follows:

Infection:

Local

Metastatic

Toxemia:

Metabolic

Infectious

Poisons

Trauma:

Local

General

Tumors

Degenerations

If we study this table, we will see that the oculist requires general help in the localization of metastatic infection, in the origin of all of the toxemias, in the management of general trauma, in the origin of tumors, and in the causation of ocular degenerations. That leaves but two types of ocular disease that the oculist should endeavor to treat without the aid of other medical advice, namely local infections and local trauma.

It is perfectly true that the ocular manifestations of systemic disease are best cared for by the oculist himself, but local treatment alone does not suffice. It is absolutely essential that the underlying cause, no matter what it may be, should be searched for and if possible eradicated. Here comes the role of the man in general practice and here is the necessity for the close co-operation between him and the oculist. It is not sufficient for the internist to report "heart and lungs normal, urine normal, blood pressure within normal range." Detailed study of the case is necessary in order that all possible factors that might contribute to the ocular disease might be uncovered and evaluated as to their significance. That can be done only by a systematic study of the case and to that end we have been using a so-called "Etiology Sheet" in our work at Michael Reese Hospital. The following sheet becomes an essential part of the hospital record of every case in which systemic study of the patient is required.

MICHAEL REESE HOSPITAL

Supplementary Record

ETIOLOGY SHEET

Ophthalmological Dept.

Nose:

Inspection

X-Ray of sinuses

Suction

*Read before the Joint Session at Illinois State Medical Society, Peoria, May 18, 1933.

Throat:

- Inspection
- Tonsils
- Bacterial content of secretion

Teeth:

- Inspection
- X-Ray of teeth

Ears:

- Inspection

Thyroid:

- Inspection
- Basal metabolic rate

Chest:

- Physical examination
- X-Ray of chest

Abdomen:

- Inspection
- Palpation

Genitals:

- Male: External inspection
- Prostate
- Bacterial content of secretion
- Female: External inspection
- Condition of cervix
- Bacterial content of secretion
- Ovarian abnormalities

Joints:

- Inspection

Blood Pressure:

- Time taken

Urine:

- | | | | | |
|------------------|------|-------|-------|---------|
| Single specimen | Alb. | Sugar | Casts | Indican |
| 24 Hour specimen | Alb. | Sugar | Casts | Indican |

Blood:

- | | | | |
|-----------------|--------------|---------|-----|
| Time taken | R.B.C. | W.B.C. | Hb. |
| Polymorphs | Large Monos. | Lymphos | |
| Wasserman | Eosinos | Kahn | |
| Blood chemistry | | | |
| Indicanemia | | | |

Spinal:

- | | | |
|------------|-------|--------------|
| Wassermann | Lange | Gold Colloid |
|------------|-------|--------------|

Mantoux:

- + or —

G. C. Comp. Fix.

- + or —

Obviously it is not necessary to carry out this complete examination in every case and consultation between oculist and internist will determine exactly how much should be undertaken. When this information is available then the two physicians can evaluate every pathological condition found and endeavor to estimate the importance of such conditions in the causation of the ocular disease. In the majority of cases more than one pathological factor will be present. Scientifically, the proper way to determine the etiological factors would be the elimination one by one of all pathological conditions present; but the patient is apt to die during the process. Consequently the treatment of such

systemic diseases as may be found must be instituted coincidental with treatment of the local eye condition. Under such circumstances it is emphatically impossible to say specifically what was the cause of the ocular disease. For after all there are only two proofs—first the therapeutic test and second the anatomic proof.

The therapeutic test is notoriously unreliable. For example, an individual with an iritis may have, as in one of my cases, a 4+ Wassermann, a positive tubercular lesion, and apical abscesses of various teeth. One or all of these may be the cause and the fact that the iritis may disappear after the removal of the infected teeth is no proof that the iritis might not have had an underlying tuberculous or syphilitic basis. However, when only one possible cause for the ocular disease is found, when that cause is removed, and when the ocular disease disappears promptly thereafter, the probability is that the ocular condition was caused by the pathological entity that was removed. Note that I say probability, for only too often do we congratulate ourselves smugly that the uveitis is cured for life when it pops up again. I recall a very illustrative case of iritis in which diseased tonsils appeared to be the only possible cause and the removal of the tonsils was followed promptly by disappearance of the iritis. But within eight months, the iritis recurred in exactly the same form as in the first instance. So undoubtedly there was some other cause of the ocular disease, to which cause the diseased tonsils were only a secondary contributing factor; the straw that broke the camel's back, so to speak. I might add that the other cause was not ever discovered and that recurrences bobbed up every few years.

The anatomic proof can be positive only if the entire eyeball can be examined histologically, which the majority of patients with uveitis object to. Uveitis due to syphilis or tuberculosis can be recognized in the majority of cases by careful histological study. In the syphilitic uveitis, the presence of spirochaetes within the ocular tissue has not yet been proven unreservedly, although it is extremely probable that they are lodged in the inflamed tissues. The secondary type of ocular syphilis cannot always be differentiated histologically from similar ocular disease of other origin; but the tertiary or gummatous types can be recognized without difficulty. It is also perfectly true that

these latter forms present a clinical picture that can be recognized as such in the majority of cases by the experienced clinician. Ocular tuberculosis, however, is considerably more characteristic than is ocular syphilis, histologically speaking. Both the active and the chronic forms offer anatomic changes that allow of positive etiological diagnosis without difficulty. And in the past two years, the Koch organism has been recovered from the ocular tissues in pure culture. In two instances reported recently from Vienna, not only were tubercle bacilli grown in pure culture from the ocular tissues, but were also found in the same cases in massive culture from the circulating bloodstream by the Löwenstein method. Personally, I have never been successful in obtaining a culture of tubercle bacilli from the bloodstream in any case of ocular tuberculosis.

So with this preamble which tries to say that we should always search for the causative factor of ocular disease, but are not sure of spotting it accurately, allow me to quote some recent statistics to show the enormous divergence of opinion as to the etiology of uveitis. Gilbert in the *Kurzes Handbuch der Ophthalmologie*, Vol. V, reported upon the etiology of 500 cases of irido-cyclitis as follows:

Tuberculosis	45.6%
Syphilis	16.6%
Rheumatism	3.0%
Gonorrhoea	3.0%
Herpes	3.0%
Influenza	1.6%
Gout	1.0%
Unknown	17.4%
Other Causes	8.8%

Total 100.0%

At the 1932 meeting of the Czecho-Slovakian Ophthalmological Society, F. Hulla reported upon the cause in 222 cases of irido-cyclitis that had been seen in the Czechish University in Prag as follows:

Tuberculosis	21.8%
Syphilis	8.8%
Rheumatism	2.7%
Gonorrhoea	1.1%
Herpes	0.2%
Dental	1.3%
Nephritis	1.3%
Sinus Disease	1.1%
Unknown	8.2%
Other Causes	53.5%

Total 100.0%

At the same meeting, Kahoun reported upon the cause of 233 cases of irido-cyclitis that had been examined in another part of the country, as follows:

Kahoun—233 Cases

Tuberculosis	25.5%
Syphilis	3.7%
Rheumatism	9.7%
Hypertension	1.6%
Diabetes	1.5%
Sinusitis	0.5%
Nephritis	0.7%
Gout	0.2%
Unknown	8.2%
Other Causes	53.5%

Total 100.0%

For the sake of comparison, I compiled the findings on my last 50 cases of uveitis and found the following figures:

Gradle—50 Cases

Sinusitis	4%
Dental Sepsis	16%
Syphilis	16%
Tuberculosis	38%
Purpura	2%
Leukemia	2%
Prostatitis	2%
Undetermined	20%

Total 100%

Please do not for one minute think that I consider the figures of my small series as characteristic except in one respect, namely, the preponderance of tuberculosis. In order to arrive at percentages of real value, the series must number at least one thousand cases or more. But I do wish to point out that tuberculosis plays a greater role in the production of ocular disease than is generally recognized, at least in this country, and that it behooves us to attack the problem of ocular tuberculosis more promptly and more thoroughly than we have been in the habit of doing in the past.

Why these specificities when speaking before an audience of general men? Because it is the general practitioner rather than the oculist who can find the cause of ocular disease, provided he knows what to look for, and it is the general man who can prevent the occurrence and recurrence of ocular disease. But the general practitioner cannot be satisfied with an "insurance" examination of the patient afflicted with ocular disease, but must search out all possible sources, resourcefully and painstakingly. It is perfectly true that in only too high

a percentage of cases will the search be unavailing, but nevertheless it must be made, not only for the sake of the individual patient, but even more for the sake of increasing our knowledge for future prevention and cure of ocular disease.

THE CARE OF THE INDIGENT*

R. K. PACKARD, M.D.

CHICAGO

The care of the indigent is a responsibility of government, federal, state or local, dependent to a large degree, upon the percentage of indigent cases existing in a given community and the ability of that community to meet that responsibility. If the local community is able to meet that responsibility without an undue burden on its people, it should. If that indigency is the result of some uncontrollable disaster, such as tornado, fire or flood, then, of course, the local community has the right to look for, and receive, outside aid from various sources.

The care given to indigents should be that care which is essential to normal life as regards such necessities as shelter, food and clothing and medical care which modern civilization demands. To dissect this responsibility and thrust a portion of it on any one branch of our economic or social organization is unfair. Medical care, as a social and economic necessity, is not unlike the essentials of shelter, food, clothing, etc., and as I have repeatedly said before, the problem of medical economics is not an isolated economic problem but a part of the whole economic problem that confronts any given community.

The question is frequently asked, "Who is to blame for indigency and who is responsible for indigency?" This is important. I cannot answer who is to blame but I can answer who is responsible for their care. We had better study the causes of indigency to determine who is to blame. The causes are:

1. Unemployment.
2. Sickness, including mentally and physically handicapped individuals.
3. Low wage scale.
4. A group of miscellaneous causes that are not extremely important where a large number of indigent cases are concerned.

Indigency reaches its highest point in periods of economic depression when it can be less well cared for, and it reaches its extreme low ebb in periods of unusual prosperity when it is rather easily cared for. In periods of economic depression, unemployment and low wage scale form the great majority of causes for indigency; however, even in times of prosperity there is unemployment and low wage scale indigency; while in periods of prosperity these two groups fall and during that period sickness and the individuals who are physically and mentally handicapped form the largest percentage of indigent people. The miscellaneous group is not important. It may include malingerers, poor investments and reckless spending in estates inherited.

It is, I believe, obvious from the foregoing that indigency is largely a problem of economic conditions in industry, and certainly the medical profession has little to do or say in the control of such matters. What are our present plans for care of the indigent? They might be classified under two distinct headings because it appears that there are two definite classifications:

1. General care.
2. Medical care.

First, general care. In the present emergency we are all quite familiar with the various sources of revenue by which the indigents are being cared for aside from medical care. These come from personal and organized charities and municipal, county, state and federal aid under some form of taxation directed to meet this responsibility, each giving what he can, the remainder by taxation. Medical care is through similar agencies, private, charitable, municipal and state hospitals having associated outpatient departments for care of ambulatory cases; also clinics and dispensaries associated with the medical schools; and then again in the rural communities through a physician employed by the county or township board. In a very large percentage of these institutions where medical care for the indigent is instituted the services of everyone connected with such care are paid for by one of the organizations or sources enumerated above but in very few of those instances are the physicians paid at all for the vast amount of work they do in the care of the indigent. I do not think I would be far

*Read before Secretaries Conference, at Peoria, May 16, 1933.

out of the way by saying that ninety per cent. of the medical care of indigents in the United States at the present time is being given by the medical profession free. In a communication recently mailed to the Secretary of the State Medical Society of every state in the Union and by further correspondence with nearly fifty other people who are familiar with this work it is clearly demonstrated that in the vast majority of indigent work the physician is not paid. In fact, in ninety per cent. of the correspondence received it was stated that physician's services were free. It is generally assumed, for some reason or other, perhaps through customs of years gone by, that it is his duty to render his services to indigents free of charge.

In those institutions, particularly large municipal and charity hospitals and county hospitals where these patients are used, to a large degree, for teaching purposes there is, of course, some direct benefit accruing to the medical profession through its department of education. And the men doing the work free of charge and using this material for teaching purposes probably feel somewhat repaid for the time and effort spent. However, this is not a compensation and in these cases, the patient usually receives the very best medical and surgical care procurable in the community.

In the rural districts where a county physician is hired to take care of indigent cases it becomes a very important problem from the standpoint of the public. In a large number of instances throughout the United States the work goes to the lowest bidder or perhaps one who has some political "pull." It is quite obvious that the medical service purchased upon this basis is apt to be an inferior service and the public, therefore, pays the penalty for poor medical service as a result. There is another vital feature associated with this particular type of work in that it takes away from the public the privilege of having their own physician and places them under the care of an individual who necessarily cannot be qualified in all the branches of medicine and surgery. It is true that there are many exceptions to this program but in the great majority of indigencies either the family physician has to do the work gratis, the patient has to do without it

or they have to accept the appointee of the township or the county board.

This is obviously a serious problem and one for which the medical profession should not be criticized because of their interest in it because, after all, it affects many more people than it does physicians. If we are to estimate at the present time the number of indigent people in the United States it would probably approximate mostly sixty million people who come under the classification of some degree of indigency. We must remember that indigency occurs in varying degrees especially in those people who have some form of employment but not sufficient income from which to derive a living. So that I believe I am not far wrong in estimating that sixty million of our population at the present time are suffering from some marked degree of indigency.

It seems obvious that the public as a whole should not ask more of the medical profession than they are willing to ask of themselves. The members of the medical profession besides giving their time give equally well of their money. In my own personal acquaintance among physicians who are not bordering on indigency themselves I do not know of a single instance in which they have not contributed to the care of the indigents in the form of cash during the present emergency. And furthermore, I do not know among my associates a single doctor who has refused to render service to patients because they were not able to pay for the same. Quite the contrary, I know a number who have volunteered to take care of them during their period of indigency, one might say, with the thought in mind of keeping their business intact for better days to come. But this is certainly not the reason in the majority of indigents.

Now the solution of the problem of the medical care of indigents lies in an understanding between the medical profession, represented in their local societies, the public at large and the public officials who have under their jurisdiction the dispensation of public funds and public care. With the intelligence of the general public in regards to this matter I think there would be little question. It has been proven that there is considerable question relative to the willingness of the county and township board to cooperate with the medical profession

in this serious problem. This is usually because neither the trustees nor the local society are familiar with the subject and how it is handled in other communities. However, there have been worked out in some states, notably Iowa and Indiana, perfectly satisfactory plans for care of the indigent. Satisfactory to the patient and satisfactory to the medical profession and to the public. They are satisfactory because they allow the patient choice of physician; to the physician because sickness is under their control and they are compensated; and to the public because they are discharging a responsibility as good citizens should. In a number of these plans a township or county board pays a flat sum for the care of the indigent in a given territory for a period of one year. The patient calls his family physician who renders the necessary service and then sends his bill to the County Medical Society who in turn pay him. In some instances the County Medical Society does not distribute the funds to its members but uses it for paying local and state dues, defraying expenses of their scientific meetings and maintaining a library. In other instances the indigent patient calls his doctor who renders service and mails his bill first to the County Medical Society who O.K. or alter it and send it to the county board for payment. In other instances the doctor renders his service, takes a note from the indigent and turns the note over to the board for cash. There are various other plans in operation. Time forbids entering into the details in particular; however, these plans are available for those interested in a study of the problems and a plan for their solution.

Unfortunately, in the large percentage of cases, no plan is in operation at all or it is only the single plan of having a physician who attempts to do all the work. This, of course, is a grave error because it denies the patient choice of physician, usually means inferior service and is discriminatory in character.

The above plans outlined are practically the only solution offered or available for the care of the indigent sick during long and severe economic depressions and it would seem feasible that governmental agencies might consider the necessity of creating reserves in periods of prosperity to draw on in cases of economic emergency. It also appears feasible that in-

dustry should create a reserve during their periods of high income to be drawn on during periods of unemployment or that some form of unemployment insurance be instituted. Industry has not assumed its obligation in this respect but has pursued a course of stock dividends, increased cash dividends thereby creating a speculative market which caught its own employees in the market decline and further increased indigency as a whole. Industry is cognizant of this fact and perhaps better plans will be established for the future.

As regards the normal indigency of good times, caused as a result of low income to a large percentage of our industrial population, which places them in the partial indigency class where they cannot procure proper medical and hospital care, group hospitalization plans offer a solution for the situation. Time forbids a detailed discussion of this plan. Suffice it to say that actuarial statistics are available and tested that make it possible to give hospitalization care for a period of twenty-one days per year for twelve dollars per year where large groups are considered, and to create a reserve for unusual emergencies.

These plans are available for study for those who are interested. All of these plans do and must keep medical care under the control of local medical societies, give the patient choice of physician, and render efficient medical care.

I think it proper that a committee be appointed by the Illinois State Medical Society to make a study of plans now in operation and that one be adopted that, by minor alterations, will meet the requirements of various communities and local medical societies. I also think it imperative, that inasmuch as the peak of indigency occurs in economic depressions and has to be met by adding an increasing burden to the still solvent public in the form of donations and taxes, that the profession should and must guard against unscrupulous members running up excessive and unwarranted charges and against rendering service, especially surgical, when they can be postponed without harm to the patient. Unfortunately, such instances have happened and they defeat the whole purpose of both the profession and the public of attempting to handle indigency sickness with fairness to all concerned.

DISCUSSION

Dr. F. E. Bollaert, East Moline: I have been greatly interested in this problem and have been working at it. I want to thank the speaker for his concise and clear views on this subject. We in Rock Island County have been working quite a lot on the care of the indigent, particularly the factory cases that have been out of work and now cannot pay their doctors. In our county a good deal goes by bidding. In the last year one of the men of our County offered to take one of these bids at one dollar per year. At the same time he was applying for membership in the County Society. He was not accepted to membership. Now he has agreed to drop the dollar a year work and has been reinstated. It is not a question that interests all of you, but there are certainly members here from counties in which there are public institutions and insane asylums. In the last year, in the State Department of Public Welfare, they have decided that it would be a good plan to have surgeons and consultants come in from outside and donate their services to these public institutions. As a result they have discharged their State surgeon, a man who was getting a fairly decent salary for going around to these institutions and doing surgery. They found plenty of men in most of these counties who were willing to come in and do the surgical work for the state free of charge. We did not think this was charity. Everyone else doing work for the state was being paid. Why not the surgeons and consultants? If I may suggest, carry back this message to your county societies, especially in the counties where there are public institutions. There will be a motion introduced into the House of Delegates concerning such practice, except where it is connected with teaching institutions. This happens not to be the case in most of these institutions.

Dr. Elizabeth R. Miner, Macomb: I thank Dr. Packard very much for his fine paper. I would like to ask what kind of psychology we can use to change the attitude of the public so that the doctor may be paid. Just now it seems to me everyone is asking the doctor to do everything for nothing. We know doctors are perfectly willing to do their share of charity, but why not ask a fair price for their services. I notice when anyone else puts in a bill to the county supervisor they ask a little more than the ordinary price. When doctors put in a bill the county supervisor expects them to make it so low that it is unfair. The ordinary price for obstetrical care in our county is \$25.00; for the county it is \$10.00 and if the county supervisor is willing this bill goes through. If we have not received his consent to care for the woman beforehand, it may not go through. The doctor is expected to give money toward charity and do charitable work besides. Why should he not be paid for his work?

Dr. D. D. Monroe, Edwardsville: Under the present law designating township relief as the basic element for caring for the indigent we have tried out in our county a plan of township physician. The city of Alton comprises a township and city all within the same limits. During the year our physicians in Alton rendered \$24,000 worth of service and then because the township refused to pay its doctors, and the city refused to pay,

the local medical society discontinued its service. Afterwards one physician in the city of Alton made a bid of \$800.00 and took over the same work. No man who bids on that sort of basis is ever adequately paid and does not render service that \$24,000 calls for.

Dr. R. B. Armitage, Lawrenceville: Several years ago our County Society decided they could handle this problem much better than the individual, so we made a contract price for the entire county work. All the orders for medical aid come through the supervisors in various towns. Our bills are sent in to the auditing committee of the County Society and we are paid. In the four or five years we have run from 61 to 105 per cent. of what our bills amount to. The last two years we changed our plan because the supervisors in the county decided they would change our fee. We found out that a strong society even in a small county can accomplish a good deal. The Society refused to have its fees changed the way the supervisor wanted. We got together and decided on a new fee schedule for pauper work. Now we are paid for everything we do by the supervisor. The town supervisor said they could not do anything because we seemed to be organized and all the doctors stuck to same fee schedule. The only way to work this is by a strongly organized society.

MILITARY HYGIENE*

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Military Hygiene and Sanitation and Preventive Medicine have the specific aims of maintaining the health and vigor of selected men living together in large groups and of so training their minds and bodies that fatigue and exposure may be endured with a minimum of disability. In order to achieve all that may be accomplished in the direction of this ideal every well established practical measure for the preservation of health and the prevention of disease is utilized to the extent permitted by the military exigency.

There are certain essential differences between military and civil public health practices. The army surgeon deals largely with picked men the majority between the ages of 20 and 30. At any time he must be prepared for the abrupt transportation of the community from a station complete with modern sanitary installations to a remote locality where environmental conditions are primitive. The state or city health officer deals with a population of all ages, and with all degrees of

*Read before the Section on Public Health and Hygiene of the Illinois State Medical Society, Peoria, May 16, 1933.

susceptibility to infection, but a population which is stable and where the incidence of disease may be predicted with fair accuracy.

Measles and chicken-pox and mumps cause the civilian health officer, at most, to speculate on whether the curve will go up or down next week. To the army surgeon, especially if his organization contains a large proportion of unseasoned recruits, these diseases are more to be feared than others whose death rate is far higher but which do not tend to spread so rapidly, and cause the disability rate to mount so suddenly. A sick man is not only a total loss, from a military standpoint, during the period of his hospitalization; he requires the time of other persons to nurse him and to treat his ailment. The prevention of disease by every known practical means is therefore imperative.

During the past few years miracles have been accomplished in the prevention of disease. Through modern water purification and sewage disposal systems, the pasteurization of milk, fly control and the identification of carriers, typhoid fever is no longer an urban but a rural problem. With a resultant sense of security the city dweller is not having himself immunized against typhoid fever, and he does not concern himself with revaccination against smallpox.

It is my impression that the average health officer does not wage a hard fight to change these conditions. His interest centers upon the protection of his population from the carrying agencies of communicable disease.

That his community shall be a safe place in which to live is his chief aim. He can accomplish this with money, and, to obtain the money he needs the support of only the small group of individuals who make appropriations. It is so impossible to secure the interest and cooperation of an effective proportion of the population he is constantly tempted away from all effort to secure individual prophylaxis.

The situation of the Army surgeon is absolutely different. His location depends upon the military necessity and his control of disease vectors in that location may be ended at any moment. Therefore individual prophylaxis is of the greatest importance to him, and every person under his care without exception is periodically immunized to smallpox and ty-

phoid fever. The army as a whole is so well satisfied with the results of individual prophylaxis that a large percentage of army children are immunized against diphtheria and scarlet fever even though acceptance of these procedures is entirely voluntary.

Another difference is that the activities and functions of the Army Sanitarian are definitely and specifically prescribed. His reference and text-book is Army Regulations. In the official classification those regulations which refer to the Medical Department have the generic number 40, the specific number follows a dash. For instance, the regulations which concern the general provisions of the medical department are numbered 40-5, those which concern Standards of Physical Examination are 40-105. The object of the latter is stated as "being to procure personnel which is physically fit for the rigors of military service."

It is with men selected in accordance with this standard that the Army doctor deals and it is his aim to keep such fitness at the highest possible level. His first concern in this is AR 40-205 which is "Military Hygiene and Sanitation." This pamphlet of only 20 pages is an epitome of knowledge and experience in practical sanitation. It is *Military Hygiene* and a brief analysis of it would seem to be required in such a paper as this.

The first paragraph requires cooperation and ends with this sentence: "The issuance of proper orders and regulations regarding hygiene and sanitation will not produce satisfactory results unless they are intelligently enforced and implicitly obeyed by all, from the highest to the lowest grades." Paragraph 2 fixes definitely the responsibility in these words: "Commanding officers . . . are responsible for sanitation and for the enforcement of the provisions of sanitary regulations." "The Medical Department is charged with the duty of investigating the sanitary condition of the Army and making recommendations in relation thereto, of advising with reference to the location of camps and stations, the quality of water supply and purification, the efficiency of waste disposal, the prevention of disease among military personnel, and the execution of all measures for conferring immunity from disease on military personnel." Paragraph 3 says, with regard to the importance of sanitary supervision: "Supervision of the hygiene and sanitation of a station or command is one of the most important duties devolving upon a medical officer." Paragraph 4 concerns instruction in hygiene and sanitation; 5 and 6, sanitation details and sanitation in a theater of operations. Paragraph 7 says, with regard to personal cleanliness:

"At prescribed physical inspections of enlisted men particular attention will be given to the personal cleanliness of those being inspected." Paragraph 8 deals with the important matter of shoes and the care of the feet: "Company commanders, by frequent inspections, will see that the feet of their men are kept in normal condition for marching." "An undue amount of foot injury and disability from shoes will be regarded as evidence of inefficiency on the part of the responsible officers and will be investigated." Paragraph 9 contains the requirement that:

"Each barber will be required to undergo a monthly physical inspection and submit to such other examinations and tests as may be necessary to insure his freedom from communicable disease. Barbers will keep their persons and clothing clean, and while attending patrons will wear a clean, washable outer coat or uniform. They will wash their hands thoroughly with soap and water before attending each patron. Barbers will not sell or give away, without the approval of the surgeon, in writing, medicinal applications for the hair or skin to be used outside the barber shop, nor will they attempt, under any circumstances, to treat pimples, moles, warts or similar lesions of the skin or scalp. The application of styptic pencils or other solid styptics to arrest bleeding from cuts, etc., is prohibited."

The sanitary suitability of a water supply, the importance of purification, methods for purification, and laboratory control are covered in Paragraph 10. Also are given methods for the purification of water in the field—by chlorination in the Lyster bag or other receptacle or by boiling.

While working at the Army Medical School in Washington, on the subject of water purification I learned that one drop of 7% tincture of iodine is sufficient to render a canteen full of water practically sterile and quite safe for drinking.

One of the most important subjects is that dealt with in paragraph 11.—Foods and drinks. The manner in which it is prescribed that bread and meat shall be handled is as follows:

"Vehicles for transporting bread, fresh meat, and like exposed food supplies will be kept scrupulously clean. Each organization or mess will be required to provide clean paulins, cloths, bags, or other approved devices which will fully protect such supplies from contamination from handling, exposure, and contact with any part of the vehicle."

The same paragraph, under mess management, requires that: "Officers and others in charge of messes will make a thorough study of the purposes served in nutrition by the different foodstuffs (protein, fats, carbohydrates, mineral salts, and vitamins). This knowledge is necessary in order that the meals prepared for consumption may contain a proper proportion of each of these nutrients."

It is too bad when a fine old tradition must be upset but the following is actually a regulation: "Hash will not be served as food unless freshly prepared."

Paragraph 12 requires that all food handlers shall be carefully examined for evidence of communicable disease. "Scrupulous cleanliness" is demanded, by par. 13, "in all rooms used for the cooking and serving of food."

The high incidence of the so-called "Sputum borne diseases during the training camp period of the world war caused the methods of washing dishes, and especially mess kits, to be thoroughly investigated.

The following is quoted from par. 14, "c. Mess kits. —When the cleansing of mess kits by each individual soldier is necessary, three suitable containers, such as galvanized-iron cans or tin boilers, will be provided. The first two receptacles will contain hot and soapy water and the third will contain clear hot water alone. Each soldier will clean his mess kit by scraping with his spoon the residual food into a garbage can or other suitable receptacle, then carefully washing the equipment in the first receptacle of soapy water, rinsing it in the second receptacle of soapy water, and finally thoroughly rinsing it in the receptacle containing clear hot water. After the final rinsing, the equipment will be shaken and air dried. Drying towels will not be used. Personnel in charge of mess will be held responsible for the proper changing of water in receptacles to insure mess kits being washed in hot water either clear or soapy as the case may be.

"d. In the presence of an epidemic of intestinal or respiratory diseases the boiling or steaming of dishes may be required."

Garbage is the subject of par. 15, excreta of par. 16 and manure of par. 17. The adequate disposal of human waste is one of the most difficult matters the medical officer has to deal with among persons not accustomed to the requirements of military hygiene. Army regulations cover the subject clearly and adequately. Paragraph 18 concerns the pollution of streams and the analysis of sewage.

The housing of troops is a military matter which receives most careful attention. Par. 19 prescribes:

"In barrack dormitories (squad rooms) at least 60 square feet of floor space and 720 cubic feet of air space will be provided for each occupant. In the determination of air space any height of the room over 12 feet will not be considered. Based on these allowances, the man capacity of each dormitory will be stenciled upon the doors as follows: "Authorized capacity,—men."

The remaining paragraphs 20, 21, 22, and 23 of 40-205 give in considerable detail information concerning mosquitoes, flies, lice, and bed bugs, and methods for their control or eradication.

Other regulations, pertinent to our subject, give in clear language the most modern practical methods for the prevention of communicable disease. They are as follows:

AR 40-210- The prevention of the communicable diseases of man. — General.

AR 40-215- The prevention of the communicable diseases of man. — Immunization.

AR 40-220- The prevention of the communicable diseases of man — Diseases of the respiratory system and other diseases transmitted by discharges from the respiratory tract.

AR 40-225- The prevention of the communicable diseases of man — Intestinal diseases.

AR 40-230- The prevention of the communicable diseases of man — Insect borne diseases.

AR 40-235- The prevention of the communicable diseases of man — Venereal diseases.

AR 40-240- The prevention of the communicable diseases of man — Miscellaneous diseases.

This group, from number 210 to number 240 are the preventive medicine regulations. They tell army surgeons what must be done and they inform other members of the military establishment what cooperation must be given the medical department to prevent communicable disease. No method of doubtful or debatable value is included and nothing of proved and practical value is omitted. As often as necessary to keep the regulations abreast with advances in medical and sanitary science amendments or "changes" as they are called officially, are issued.

Many laudable aspects of the sanitary regulations might be noted and discussed. In this I refer chiefly to AR 40-205. They are definite, clear, and concise in every detail; they are comprehensive in that they prescribe the right way for doing everything essential to health in any type of environment; they are progressive in that they enjoin upon medical officers a spirit of research toward improvements in methods and equipment; they are economical for the Army by the very nature of its mission in the field can have only bare necessities; there is nothing superfluous, any unauthorized reduction in or neglect of their requirements invites disease and disaster. All these qualities are summarized in a single word when we say they are "practical." The accuracy of this claim is constantly demonstrated. The question might now be asked, if practice of the principles of military hygiene actually does make it possible to live more safely in any type of environment why is the knowledge of these principles so exclusively military? Why, indeed?

Somebody might reply that hygiene is taught in the public schools and such teaching should be adequate. I agree that it should be adequate

but it is not. The great and increasing group of instructors interested in health education in the schools is doing marvelous work and their influence is spreading. There is however in the modern educational system a current of opinion which is tending to undermine all their work, that is the theory that discipline is unnecessary. Mother church knows that Heaven can be attained only by absolute conformity with the sacred teachings. An earthly paradise requires nothing less. Mother church knows that the instruction must start while the child is still in the cradle. Instruction in personal hygiene should start no later and it must be no less continuous. I have no faith in the re-education of an adult to the extent of changing his habits. If he changes them he does so only under strict compulsion.

This is the reason there is a serious and unremitting effort toward effective personal and environmental hygiene in a military establishment. The army must.

My feelings in this direction have doubtless been strengthened by contact during the past few years with the fine young men who have come to Fort Sheridan as members of the C.M.T.C. During the first week of their separation from modern plumbing life is considerable of a burden to them. They have been taught hygiene from a book and they know as much about it as they could learn of golf or tennis from a book.

If it were necessary to prove that "military hygiene," with all that both words connote, is an asset we might point to the prevention of typhoid fever during the World War; to the discovery of the cause of yellow fever by Walter Reed, an Army surgeon; to the work of Gorgas in military hygiene which made possible the building of the Panama Canal. It is difficult for us to realize now that prior to 1898 our country spent every year on quarantine enforcement against yellow fever a sum of money equal to the entire cost to us of the Spanish American War.

I believe in the methods and teachings and practices of Military Hygiene. I believe that our country will benefit when such practical discipline is a fundamental in our public schools from the lowest to the highest grades. Call it by any name it is merely practical Public Health.

DISCUSSION

Col. J. J. McKinley, Illinois National Guard, Hines: The paper, of course, covered the subject thoroughly. It did not hit any of the details because it could not; it would take a book to do that. For me to raise any question about the paper or the methods, of course, would be foolish because, as the major said, we don't raise questions about the sanitary orders in the army. They are time-tried and fire-tested and you can't go wrong on account of them.

Now, to go to the particular problem in the National Guard, we have a body of men that are not picked over the way they are in the regular establishment. We haven't reached that standard at the present time. We are improving, though. Our men are not trained like the regular army men. We can only hope to have them trained basically so that, if things break, they will be able to get out and have a good start, at least.

When we go into camp, we have contractors that furnish our food. We have to educate these fellows because they change from year to year, and one that has been delivering last year for two weeks has forgotten a lot of things we taught him and we have to re-educate him.

We have a flare-up of intestinal trouble once in a while. That is only rare at the present time. However, three years ago we had a little flare-up, in one organization, and I took the medical inspector, the regular army instructor and myself and went over that thing from stem to stern and we could find nothing to lay our fingers on as to why that particular organization should have this little flare-up in intestinal trouble when none of the rest of the camp had. They were the flyers. The only thing we could lay our hands on was exposure in the air and getting chilled. That didn't satisfy me, but that is the nearest we could come to putting our fingers on it. Last year we had about decided to leave our garbage cans open because that attracted the flies and we thought it a good thing to attract them and keep them away from the kitchen. Now my friend here, the major, comes along and tells me that the thing to do is to put a trap on top of the garbage can. I have already ordered some of those traps for this year and trying it in our camps, and it looks good to me, because no matter how careful you are the untrained man will not keep his fly bait moist. You can go around every five minutes of the day and find the same thing.

The care of the feet is another thing we had a lot of trouble to start with, but that has tamed down. We had an over-night bivouac two years ago, and we had kept after the company commanders to keep after the men about their feet, and have them put on woolen socks for the march. It was only eight miles. We were surprised that very few men came into the hospital to have their feet taken care of; in fact, I think only three. One of them came in, and he was the most sheepish individual you ever saw to walk into the hospital. We got him to take his shoes off and he had on nice thin sheer silk socks. I asked him what the reason was. He said he was on guard that night and didn't have time to change in the morning. I supposed

he must have been some bookkeeper or some one who sat at a desk all day. I asked him what his civil occupation was. His feet were nice and sore. They weren't flat. There were no blisters but just feet that were actually tired out. He wouldn't tell me. I kept after him though. Finally he said he was a mail carrier, the last thing in the world you would think of.

Our water in camp is tested the same as our city water is tested several times. The mains are all flushed and then we put the mains through the process of chlorinating. We take samples from the ends of the mains every day and right in our own laboratory we run them through and, if we see that there is anything suspicious, we increase the chlorine at the pumps. We have our own pumps. I tried to get the testing material for sufficiency of chlorination this year and was informed that the army doesn't issue it any more. I don't know why. I thought it was a rather effective way of testing.

Maj. Hitchens: It's too expensive.

Col. McKinley: I will have to admit that I have no regrets about the ready made hash being done away with, but I would be indeed sorry if they did away with the freshly made hash itself. It is rather odd to see the class of individual, whether he is from the Gold Coast or whether he is from "back of the yards," come down there and will eat, if you allow them, with a mess kit that they would never think of going into a restaurant or any place where there was one-thousandth of the debris on the dish that is on that mess kit. You have to keep them constantly in hand. Of course, we only have two weeks at it, where you have fifty-two.

We notice that the only time they have any particular amount of respiratory diseases is when there is damp wet weather. They are not used to it, having to live in tents. Or, when there is very dry dusty weather. When either one of these comes along, we know that in a couple of days we will fill our hospital with these little attacks of lung trouble.

I do certainly agree with the major that you can not reeducate the adult in changing habits, to any great extent. However, the converse of that is not quite as near the truth. The man that has had good habits, if he is in a group that has poor habits, is very apt to slip.

If any great per cent. of the population of this country would live up to the sanitary rules the way the major has outlined them, and the way they are outlined in the 40 series in the army, we as a medical profession would be hit infinitely harder than State medicine ever has or ever will hit us.

Lt. Col. A. B. Middleton, Med-Res., Pontiac: I can understand the modesty of the Major, when he says we should not censure a man for being enthusiastic on some one point, because that is the thing he has been doing for years, a large part of the time in the Philippines with an enthusiasm against the house fly. The result of his work and that of his associates has saved thousands of lives. If he and others had not been enthusiastic in chasing the fly, thousands of natives now living would be dead today as well as hundreds of our soldiers. Standing as I do before Col. Pollard and Col.

Gillespie and Lt. Nelson, one of the sanitary officers in 119 of the general hospital, it makes me feel a little delicate in discussing this paper, even though my hair is gray.

I do want one thing to be remembered, if nothing else in my discussion is, and that is the Major's reference to fresh hash. If you know the real danger of hash that has been kept on ice before being cooked and if you are in a position of controlling the feeding of men, with this knowledge of the danger of stale hash, you will save many lives and much sickness. Do you know that if meat and potatoes are prepared, cut up, put together and stored in an ice box and kept there twenty-four hours and then made into a stew and served to human beings a large per cent. of those eating it will develop abdominal cramps and a diarrhea which often is fatal, due to the chemical change which takes place when meat and potatoes are mixed and placed in an ice box. It is the result of that very action which prompts the Medical Department of the United States Army today to establish the rule that, if you feed men poison like this when you know that will develop this condition, someone must suffer the consequences. The United States Army does not object to fresh hash. In fact, they approve of it, as it is one of the best foods I know. For example, a personal experience during the World War; while serving in the second training camp at Fort Ben Harrison. My outfit went out for a practice over night in bivouac. Our mess sergeant was a very good cook but at this early date knew nothing about military hygiene; he knew nothing about hash that had been let stand in the ice box before being cooked. All he knew was to make good meals. Therefore, he wanted to serve a nice warm meal the next day at noon. He had his men peel potatoes and cut up the meat, put it in the ice box over night. The next day it rained all forenoon and he could serve only a noon lunch; consequently the hash was served for supper. Out of thirty-four men nearly all of them became sick while some had to return to camp in the ambulance. Therefore it is easy to understand why the Army will not serve stale hash.

With regard to strict military sanitation, if such is enforced in our communities, the same as it is in Army quarters and camps, we would require, as Col. McKinley has said, fewer doctors and even they would have less to do because it would wipe out of existence more than half of the medical practice, but that cannot be done. The civilians will not stand for strict hygienic laws. Medical men should understand the principles of military hygiene and carry them out in communities in order that the people might be benefited.

Col. McKinley said that following the suggestion of the Major he was having fly traps made to set on top of the National Guard garbage cans. The Major does not stop here. He even goes after flies that are underneath the platform which supports the cans. Last summer while on duty at Fort Sheridan I happened to be in the party Major Hitchens took around the camp to show how it should be managed from the standpoint of sanitation, especially in relation to garbage cans and

flies. He showed us the garbage can covers, fancy screen doors and everything else. Then he said to a couple of soldiers, "Bring a rake and hoe." He removed the platform upon which the cans were resting and began gouging around and said, "See that larva down there? They are unhatched flies. Consequently, you cannot stop by covering the can, you must get down underneath these platforms or you will never control the fly menace." Therefore, Col. McKinley had better get busy below as well as above his garbage cans if he wants to carry out the Major's idea of fly extermination and sanitation. All flies carry disease and we must get rid of them, nor are they always bred in the manure piles; they are found everywhere that garbage and decaying food exist.

The Major has had a wonderful personal experience. The army and the people of the United States owe a great deal to him for the research work he has developed in fly sanitation.

PHYSICAL MEASURES IN HYPERTROPHIC RHINITIS*

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CHICAGO

Resection of any part of the inferior turbinate bone is imperatively indicated only in rare instances of unusually severe pathologic changes. The same holds good, but to a lesser degree, for septal resection for the purpose of remedying impaired breathing. Authoritative opinion properly tends to suggest radical surgery only when absolutely indicated and insists on reliance on conservative measures to attain most objectives. Clinical experience shows that with the correction of dietetic errors and dysfunctions of metabolism, conservative local measures suffice to reduce the size of the hypertrophied inferior turbinate.

Among these measures cauterization by chemicals and by intense heat has been tried and found wanting. Chemical action is hard to control and brings about unnecessary destruction of normal tissue. Galvanocauterization is an improvement over chemical caustics, but its application brings about inflammatory reactions which only too often terminate in scar tissue formation. Care must be exercised to prevent serious damage to the mucous structures which will permanently interfere with their functions. Ballenger has aptly said that if cauterization of the inferior turbinate is performed to such a degree as to accomplish

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anything at all, it will also produce scar tissue, certainly an undesirable end result.

It is clear that cauterization should have only a limited place in rhinologic surgery, as indeed we now possess in our armamentarium means by which we can attain satisfactory therapeutic results without at the same time causing harm.

DIFFERENTIATION OF CHRONIC RHINITIS

It is essential that we should be agreed on the classification of chronic rhinitis as a basis for the rational use of the newer physical measures to be discussed. While some authors make no differentiation of the types of chronic rhinitis, there exists a difference in the underlying pathology which is of special interest to us. Thus, the inflammatory process in the so-called "turgescient" form is not only less intense but of an entirely different nature than that of hypertrophic rhinitis. Rhinoscopy often suffices to show the early engorgement, smoothness, and boggiess of the inferior turbinal as differentiated from the infiltration of the connective tissue and thickening of the blood vessels in true hypertrophic rhinitis. In other words, rhinoscopy alone often suffices to separate a simple hyperemia from an increase of tissue. When, as is often the case, a sharp line of separation cannot be drawn with certainty, we need only to apply epinephrine or cocaine to settle any doubt, for these drugs can shrink a hyperemic mucous membrane but have no reducing effect on an hypertrophy for self-evident reasons.

Beck's classification of rhinitis, which is rightly regarded as the most comprehensive, clinically as well as pathologically, includes, in addition to the above, the hyperplastic or allergic form, the atrophic inferior turbinate, and the neoplastic and rarer forms of inflammation, such as syphilis, tuberculosis, and rhinoscleroma.

For our special purpose, so far as hypertrophic rhinitis is concerned, none of the classifications can serve us for therapeutic guidance. For this particular purpose I submit the following grouping:

1. *Simple, chronic rhinitis*, yielding to removal of the underlying cause;
2. *Congestive rhinitis*, in which the structural changes manifest a venous hyperemia, favorably influenced by removal of the underlying cause, plus conservative local therapy;

3. *Hypertrophic rhinitis* of a *mild grade*, responding to removal of the underlying factors plus energetic constitutional and local therapy;

4. *Hypertrophic rhinitis* with *turbinal osseous overgrowth*, for which only surgical resection is effective.

PHYSICAL MEASURES IN HYPERTROPHIC RHINITIS

The development of physical therapy as an integral part of general medicine and surgery, has added to rhinologic therapy three procedures, namely, zinc ionization, medical diathermy, and electrosurgery, each of which is effective in certain types of rhinitis. As these measures are not as widely known as their efficacy merits, we shall present them in a somewhat detailed and critical manner.

Zinc Ionization consists of the application of zinc to tissue by an electrolytic process. Zinc ionization is indicated chiefly in the milder forms of chronic rhinitis with slight pathologic changes of the nasal mucosa, especially of the inferior turbinal. The technic is relatively simple. All that is required is a galvanic battery, equipped to control the intensity of the current, a zinc wire which should be connected with the positive pole of the battery, and a fairly large, flat, felt-covered metal electrode to be connected with the negative pole.

After cleaning the mucosa of crusts and secretions, long narrow strips of gauze, saturated with Friel's solution are firmly packed into the affected chamber. Friel's solution consists of zinc sulphate, 5 grams, glycerine 60 cc. and distilled water, 1000 cc. Just before use the solution is diluted with an equal quantity of warm distilled water.

The zinc wire is fixed in the wet pack, the moistened felt-covered electrode is attached to any desired part of the body, and a current of about 10 ma. is allowed to run for fifteen minutes, when the current is reduced to zero, stopped, and the packing is removed. During the treatment the patient experiences profuse salivation and a pronounced metallic taste which he accepts when cautioned that they indicate effectiveness of the treatment. One treatment may suffice, but sometimes several are needed. We have yet to see a case in which more than four were required.

Rhinoscopy performed immediately after the conclusion of the treatment reveals the mucosa to have undergone a mild, superficial coagula-

tion. For 24 to 48 hours the nose is stuffy, as in a common head cold, but this soon subsides and breathing becomes normal. Nasal discharge becomes lessened and the general symptoms gradually disappear. The length of intervals between treatments is to be determined in each instance by the course of the symptoms just outlined.

Medical Diathermy. For severer types of chronic rhinitis diathermization is preferable to zinc ionization because of its prompt and striking effects. The technic we have developed requires the use of a special metal active electrode, gutter shaped and insulated to within 2 centimeters of the distal (nasal) end. This electrode is placed in a holder at right angles to facilitate direct vision of the operator. An indifferent block tin electrode, about 5 x 8 inches is best attached to the interscapular space, or, if desired, the simpler method of placing a metal cylinder into the hands of the patient can be used to complete the circuit. A foot switch for the control of the current is practical, as it leaves the operator free to use his hands and renders assistance unnecessary.

The current should be maintained at an intensity short of destruction, 250 to 450 ma. having been found effective, the variation depending on the type of high frequency machine, extent of pathology of the inferior turbinate, and manner of application. The application itself should not exceed a few seconds, and two or three such applications can be made at one visit. This procedure is repeated after a week. Local analgesia of the turbinate will be necessary only in highly sensitive patients, when a 4 per cent solution of cocaine applied for five minutes will suffice. It is essential to establish firm contact between the active electrode and the turbine, as partial or incomplete contact will result in sparking with a destructive action. On the other hand contact with the rest of the nasal membrane is to be avoided.

There is no appreciable immediate reaction, but within a few hours the turbinate swells and breathing is rendered difficult. The patient may complain of symptoms resembling acute coryza. These symptoms are entirely absent in some, mild in others, and marked in a few who do not tolerate any nasal treatment. After the third day there remains only a slight watery discharge. By that time the turbinate is re-

duced in size, and remains so, or is still further reduced by subsequent treatments until nasal function is restored to as near normal as possible.

Medical diathermy, however, is not a cure-all for every type of nasal or sinus disease. While it greatly improves ventilation of the nose in the types of cases under consideration, it has also certain limitations which must be appreciated. The simple treatment just described does not incapacitate the patient. It goes without saying that factors that lead to success are not only familiarity with the handling of the high frequency machine and of the electrodes, but also careful avoidance of the risks incident to every nasal procedure.

Electrosurgery is indicated in the forms of hypertrophic rhinitis in which pathologic changes have progressed to an extent for which medical diathermy is inadequate to give relief. To appreciate the effectiveness and also the limitations of electrocoagulation we must first free ourselves from certain erroneous ideas about electrosurgery which appear to have become widespread.

A comparison with the galvanocautery will prove enlightening. In the use of the galvanocautery a wire is brought to red heat. The electric energy used affects the appliance and not the patient, so that the same effects would be attained with any appliance heated by any other energy, as in the Paquelin cautery, for example. As already alluded to, this form of destruction by actual cautery has serious after effects. In electrosurgery we make direct use of a current of peculiar characteristics which also produces heat sufficiently to coagulate or even divide tissues. The heat, however, is created *within* the tissues by their resistance to the current, which in turn is under complete control of the operator both as regards intensity and extent. In this way our most important principle of conservation of mucous membrane can be applied with almost mathematical precision.

The technic of electrosurgery is not difficult, provided one thoroughly understands the proper equipment and its use. This is even more important than in the application of medical diathermy. The technic aims at producing one or two mild electrocoagulation punctures of the turbinal, one at the presenting portion and one about halfway back. The coagulated

areas should not exceed one quarter of an inch in diameter. A sharp pointed electrode is inserted up to but not beyond the bony portion. The indifferent electrode—the same as described for medical diathermy—had best be fixed to the skin of the interscapular space.

Simple as all this sounds and is, there are certain errors often committed by novices with undesirable results. The needle electrode is often inserted too deeply or too strong a current is used. These errors result in destruction of too much tissue and in violent reactions mitigating against the routine employment of this type of electrosurgery as an office measure.

Excellent results are obtained, however, by *submucous* or *intramural electrocoagulation*. When first introduced, submucous cauterization of the inferior turbinate was accomplished by a blunt, tunneled probe carrying a bead of chromic acid. With improvement of the applicator it became possible to produce a scar on the inner wall of the mucous membrane, in contrast to the linear scar produced by the actual cautery on the outer surface of the membrane.

Beck, Hurd, Morrison and others have devised electrodes for intramural or submucous electrocoagulation, which should replace the manner of cauterization just referred to. Beck's electrode is made of a long Hagedorn needle, insulated to 2 millimeters at the tip. After surface anesthesia, the needle is inserted into the head of the turbinate in about the center and carried along the medial aspect to the posterior part, hugging the periostium. The needle is slowly withdrawn, the current acting all the while. The same procedure is then carried out along the inferior aspect of the turbinate. To carry out the technic suggested by Hurd, Morrison devised an insulated double needle electrode which is used similarly to the single needle electrode.

Several modifications of these original technics have been presented. One may first perform superficial coagulation at the point of puncture prior to insertion of the needles. By this introductory step bleeding from large spongy or degenerated turbinates is controlled and frequently avoided altogether.

There are definite limitations to submucous electrocoagulation. Good results cannot be anticipated in extreme, unyielding hypertrophies. Favorable effects depend altogether on selection

of suitable cases and correct technical application of the method. The usual precautions when electrosurgery is employed must be borne in mind.

The chief advantages of submucous electrocoagulation of the inferior turbinate are: 1. it is simple; 2. it can be carried out in the office without incapacitating the patient; 3. local reaction is mild and without danger of synechia formation; 4. it is painless under topical anesthesia; 5. the mucous membrane is conserved; 6. the turbinate is permanently contracted in size within a brief period of time; 7. normal or near normal nasal ventilation is restored.

CONCLUSIONS

1. Physical measures in simple chronic and hypertrophic rhinitis have afforded more prompt and better results than the older forms of cauterization.

2. Hypertrophy of the nasal mucous membrane, and in particular that of the inferior turbinate, being the main pathologic consideration in hypertrophic rhinitis, treatment is directed toward the reduction in size of the turbinate to overcome symptoms of nasal stenosis.

3. Zinc ionization, medical diathermy, and intramural electrocoagulation are free from undesirable effects, and give favorable results in cases amenable to conservative therapy.

4. Because of the conservative nature and therapeutic efficacy of physical measures in hypertrophic rhinitis, they merit wider application in rhinologic practice.

30 North Michigan Avenue.

DISCUSSION

Dr. H. L. Ford, Champaign: I am very much interested in Dr. Hollender's paper; it is well prepared. I should like to ask Dr. Hollender how widely separated his two needles are for submucous diathermy. I have had two of these electrodes and the first was so thin that it bent when introduced into the tissue. The other is so firm that it is, I believe, a little too firm. It is made by Mueller; the first was a Hurd.

Dr. H. W. Bau, Chicago: I should like to ask Dr. Hollender whether in medical diathermy of the turbinates, he uses 250 to 400 ma. with the patient in circuit or on a dead short. I have been using Beck's method, and instead of using a large plate on the patient's back, I use my nasal speculum for the indifferent electrode. That way I am able to get coagulation with much less current than by using a large plate on the back of the patient.

Dr. R. H. Good, Chicago: I think Dr. Hollender should speak about the middle turbinate. Diseases

caused by the middle turbinate are sometimes much more serious than those of the inferior turbinate. I should like to know if he has used diathermy on the middle turbinate.

Dr. A. R. Hollender, Chicago (closing): With reference to electrodes for submucous electrocoagulation, the Hurd electrode was described in an article which appeared in the *Archives of Otolaryngology* some time ago. All manufacturers of diathermy equipment now make electrodes for turbinate reduction. Some of these electrodes are better than others, and it is mainly a question of preference based on the use of one particular type. The double needle electrode must be used cautiously. Some of these points are quite brittle. Also a short circuit may result in failure of coagulation. For these reasons, in my hands, the single needle electrode is more desirable. 250 to 400 ma. can be used with the patient in circuit. This will vary with the type of electrode. There is no objection to making the nasal speculum the indifferent electrode, the same as employing a tongue depressor for the indifferent electrode in tonsil coagulation.

I do not think I would use electrocoagulation on the middle turbinate unless there was some unusual indication present. We get some influence with the use of medical diathermy and zinc ionization and they are preferable because they are safer procedures. There have been some reports on the use of electrocoagulation and the galvanocautery for middle turbinate pathology, but in my opinion sufficient proof has not been established to guarantee the safety of these procedures high up in the nose.

THE VALUE OF COMBINED CHOLECYSTOGRAPHIC AND LIVER FUNCTION STUDIES*

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There is abundant evidence to support the great value of cholecystographic studies, (rendering the gall bladder visible to the x-ray by the injection or ingestion of certain dyes) as an aid in the diagnosis of pathologic conditions of the gall bladder. At present this is so generally acknowledged that it hardly seems necessary to dwell on the advantages of this roentgenologic procedure. It is well known that cholecystographic studies may be made by giving the necessary dye either orally or by intravenous injection. That both methods of dye administration have proven of great value there is no question, yet nearly all careful observers

have been willing to concede that the intravenous method is at least somewhat more accurate, because a definite amount of dye is introduced directly into the blood stream in comparison to a somewhat uncertain amount absorbed when given orally.

Time will not permit a statement of all of the advantages and disadvantages of the two methods of administering the dye, but even if both methods were equally accurate from a roentgenologic view point, the intravenous method has another important advantage that cannot be disregarded. Before considering the matter further let us briefly refer to the therapeutics of gall bladder pathology and the subject of liver function.

Mortality in Gall Bladder Surgery. The successful therapy of a large percentage of chronic diseases of the gall bladder is surgical. To the casual observer, gall bladder surgery appears to be associated with a far greater operative mortality than the comparative simplicity of the procedure should warrant. Countless surgeons have been shocked to lose patients 24 to 48 hours after a simple cholecystectomy when no especial difficulty was encountered at the time of operation. What is the explanation of this phenomenon and what can we do to avert it?

In 1918, Graham of St. Louis showed that in every case of inflammation of the biliary tract there is more or less inflammation of the liver. This hepatitis seems to be chiefly a pericholangitis and there is a good deal of evidence to think that the inflammation reaches the liver from the gall bladder by way of the lymphatics around the biliary passages. Therefore, in every case of inflammation of the biliary tract we are confronted with a liver which is more or less damaged. This idea is an important one when we consider that the liver is a vital organ in the sense that we cannot live without it; in fact, one can say with some truth that life can go on for about a week without both kidneys, but only a few hours without a liver. Probably many deaths are caused, in some degree at least, by a damaged liver. By the same reasoning we might conclude that if we had methods as accurate, for the study of the function of the liver, as those which we now have for studying the function of the kidney, we could greatly lower the surgical mortality in all kinds of operations.

*Read before a Joint Meeting of the Section on Medicine and Surgery, Public Health and Hygiene, Eye, Ear, Nose, and Throat, and Radiology, of the Illinois State Medical Society, Peoria, Illinois, May 18, 1933.

by merely knowing more accurately what patients were dangerous to operate upon because of impaired liver function.

Graham and his co-workers have also shown that when phenoltetraiodophthalein (isoiodeikon), the dye that is to be preferred for intravenous cholecystography, is injected it also stains the blood serum and that this dye can be used to estimate the liver function by a colorimeter. An abnormal retention of the dye in the blood stream is present when the gall bladder is impaired (18 per cent or less of the dye in the blood stream one-half hour after the injection is begun, is considered normal). Nearly all unexpected deaths following cholecystectomy, in which the intravenous liver function test has previously been made, have shown the retention of very large amounts of isoiodeikon in the blood stream. The greatest retention appears to be present in various forms of acute cholangitis and hepatitis, and in some cases of acute cholecystitis. It has been fairly well demonstrated that patients suffering from hepatobiliary tract disease, and showing a high retention of the dye in the blood stream, are usually very poor operative risks in whom the outcome is often fatal. If the retention of the dye is more than thirty per cent all surgery should be postponed until the patient can be prepared more suitably. According to Graham

"The preparation consists for the most part in putting the patient to bed for two or three weeks and giving a large amount of carbohydrate in order to be sure that the liver is well filled with glycogen. We were gratified to find that, by carrying out such a treatment, the liver function, at least as crudely estimated by means of the retention of the isoiodeikon, is greatly improved. At any rate our mortality figures, during the last three years, have been greatly decreased as the result of this simple means of estimation of the liver function. For example, in the three years prior to the use of this test of operability, our mortality in 216 cases of simple cholecystectomy was 6 per cent, and the last three years, since using the test, our mortality in 224 cases of cholecystectomy has been 0.4 of 1 per cent. In fact there has been only one death in this list during the last three years, and this single fatality was due to an out and out pneumonia with pulmonary edema. We have not declined to operate on dangerous cases, but have merely postponed the operation until we could get the patient into suitable condition as judged by the dye test." Surely any method that will reduce the surgical mortality in gall bladder surgery to a near vanishing point should receive our most earnest consideration.

SUMMARY

It should be emphasized that the same dye that is used in the liver function test can also be used for a simultaneous gall bladder x-ray examination. This, in our opinion is one of the strongest arguments in favor of the intravenous method of cholecystography. When given a case where chronic disease of the gall bladder is strongly suspected, why not determine, not only the presence or absence of gall bladder pathology, but at the same time ascertain the operability of the patient?

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PERINEAL LACERATIONS

A Method of Conducting the Second Stage of Labor Which Will Lessen Their Occurrence

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The primary object of any method of conducting the second stage of labor is to preserve the perineum.

Edgar, in his "Practice of Obstetrics," states that "the most important part of the management of the second stage is the prevention of tears," and goes on to say that "lacerations of the fourchette in primipara and superficial tears about the vulval orifice often occur, but that these readily heal with ordinary asepsis." The correctness of the latter statement is self evident, and will be readily concurred in by the majority of obstetricians. The first statement and another to the effect that "*Deep tears are avoidable in normal cases*" will be a surprise to many and considered of no importance to the group who contend that a repaired episiotomy or spontaneous laceration leaves the perineum in the best possible condition. They ignore the fact that repair means scar tissue, and that scar tissue never functions as normal muscle.

The contention of this paper is based upon the experience that deep lacerations, by which is meant those involving muscle whether spontaneous or due to an episiotomy, are avoidable in the majority of normal cases. To avoid a laceration is imperative to quote Edgar again because, "It is scarcely an exaggeration to state that one half of the gynecological cases owe

their condition directly or indirectly to rupture of the muscles of the pelvic floor during labor."

There are three principal causes at work in the production of lacerations.

First. A presenting part, after compression and moulding, which is too large to pass through the vulval orifice after it has stretched to its limit.

Second. Too rapid expulsion of the infant so that tearing instead of stretching results.

Third. A faulty mechanism of labor whereby a larger circumference of the presenting part than necessary passes through the outlet.

In the first instance a laceration is inevitable, but, the number of cases in which this situation is a fact are in the minority and not normal. The majority of normal cases should be delivered without laceration.

In the second instance the principal factor is the uncontrolled voluntary efforts of the mother.

A method which permits delivery without laceration in the majority of patients is one in which the presenting part has the *smallest possible diameter* and permits the perineum to *stretch and not tear*.

From the time the caput appears at the vulval orifice the patient is watched very carefully and *her efforts directed*. Just enough effort is permitted to gradually and slowly cause the orifice to dilate. Up to the time the occipital protuberance just passes the symphysis the head is naturally flexed on the chest and the smallest circumference, which is the suboccipito-bregmatic ($3\frac{3}{4}$ inches-9.5 cm.), presents. The tendency then is for the head to extend itself and the occipito-frontal circumference ($4\frac{1}{2}$ inches-11.5 cm.) followed by the occipito-mental ($5\frac{1}{2}$ inches-15.5 cm.) to act as the dilating circumference. The suboccipito-bregmatic ($3\frac{3}{4}$ inches-9.5 cm.) instead of the greater occipito-frontal can be maintained and used as the dilating circumference by continuing the flexion of the head in place of permitting the natural extension to take place. This flexion is maintained by the modified Ritgen maneuver.

One of the common methods of protecting the perineum is to attempt to hold the head back by means of direct pressure on the perineum. All this method accomplishes is to crush the perineum between two forces, the presenting head and the hand of the obstetrician. A better way

to retard too rapid advance is by direct pressure on the exposed head.

The Ritgen maneuver consisted of putting the index finger in the anus of the mother, maintaining flexion by direct pressure on the chin of the infant and facilitating delivery of the head by pressure in the line of the outlet. The chief objection to this method is the danger of infection from the finger in the rectum.

The method advocated for maintaining flexion and facilitating delivery of the head is the *modified Ritgen*. This maneuver consists of placing the fingers of the right hand back of the anus and anterior to the coccyx. The hand is protected from contamination by placing towels over the rectum. These towels can be frequently changed. The fingers first come in contact with the malar prominences on the face of the child and as the head advances they follow down to the chin. Flexion is maintained and extraction is accomplished by direct pressure.

The perineum, and in fact the entire vulva, will stretch more easily if they are kept moist with sterile solution. The bladder should be emptied with a catheter if necessary. If the bladder shows a tendency to prolapse it can be held up behind the symphysis until the occiput is free. With the voluntary efforts of the patient eliminated by an anesthetic deep enough to produce relaxation, the delivery is completely under the control of the obstetrician. It can be retarded by direct pressure on the head with one hand and accelerated by pressure of the hand on the chin with the other. When the chin is about to be delivered the occiput is already out and a little more space may be obtained by pressing the neck of the infant up to the symphysis and gently extending the head by pressure on the chin.

A number of dangers suggest themselves with this maneuver. The danger of infection from the hand back of the rectum. It can be entirely obviated by care and the frequent change of towels. Injury to the urethra of the mother from pressure does not exist. The urethra slips back of the symphysis as the head advances. Between the hand and the chin are the skin, muscle, and both walls of the rectum which is more than sufficient tissue to cushion the force and prevent a rectovaginal fistula. Another danger mentioned is that of pressure on the

eyes of the infant. This danger is not great since it is not difficult to find and recognize the malar prominences.

Absolute control of the forces is necessary to success. It is obtained by deep anesthesia of the mother.

With the head delivered some of the danger of laceration is past. At times the head is delivered without a tear only to find it present when the body is delivered. The entire problem continues to be that of getting the smallest circumference through the outlet and avoiding the passage of edges over the perineum. The greatest diameter of the infant's body is the bi-acromial. Measurement of one hundred infants showed a difference of 2 to $3\frac{1}{2}$ cm. between the bi-acromial and the acromioaxillary measurements. The next greatest measurement is the distance between the two elbows with the arms extended at the side of the body.

In the usual delivery with the anterior shoulder against the pubis the perineum is lacerated by the passage of the posterior shoulder and elbow over it. The shoulder which would naturally deliver first, depends upon the position of the head. If the head is permitted to fall over the perineum the anterior shoulder will present first. If the head is held up off the table and supported by the hand of the obstetrician, and it is almost instinctive to do this, the posterior shoulder will present and deliver first. To repeat, it is this posterior shoulder and elbow which is responsible for most tears.

From this it follows that if both shoulders were delivered in the anterior position tears could be avoided.

This can be done and in the following way. After the head is delivered instead of holding it up, let it drop over the perineum and toward the table, the anterior shoulder will invariably present. At the same time the posterior shoulder is pushed back into the pelvic cavity and held away from the perineum. The elbow and arm are delivered by traction on the head in a line away from the symphysis downward and toward the rectum or by direct traction on the shoulder itself. The elbow is delivered by pressure on the posterior surface of the arm depressing the elbow away from the symphysis pubis along the arches and across the chest of the infant. The forearm remains flexed on the arm. With the anterior shoulder and arm de-

livered, and pressure on the posterior shoulder away from the perineum, the thorax of the infant is pushed up against the symphysis and arch of the pubis.

The posterior shoulder and elbow remain to be delivered. Usually it will do so by passing over or through the perineum. To prevent this the posterior shoulder is rotated until it becomes anterior and is then delivered by the method described for the original anterior shoulder, arm, and elbow. In other words both shoulders are delivered in the anterior position in order to keep both shoulders and elbows off the perineum, and to maintain the smallest diameter at the outlet. The rotation of the second shoulder to the anterior position is accomplished by direct pressure on the shoulder within the pelvis. The line of pressure is toward the back of the infant in an arc upward and toward the symphysis, or, toward the side of the mother's pelvis which is in contact with the back of the infant. The rotation of the posterior shoulder upward can be assisted by traction in the opposite direction of the arm of the original anterior shoulder previously delivered.

The method can be summed up by saying that both shoulders are delivered in the anterior position and has for its object the passage of the smallest circumference through the outlet plus the passage of the soft compressible thorax of the infant in place of the elbow over the perineum.

Summary. Delivery without laceration of perineal muscle is possible in the large majority of normal cases. This can be accomplished by the gradual stretching of the tissues by control of the voluntary efforts of the mother plus manipulation of the presenting parts, which consists in maintaining the smallest possible circumference at the outlet. For the head the suboccipito-bregmatic, and for the body the acromio-axillary circumference which is obtained by delivery of both shoulders in the anterior position.

4024 North Harding Avenue.

Young Hopeful: "Father, what is a traitor in politics?"

Veteran Politician: "A traitor is a man who leaves our party and goes over to the other one."

Young Hopeful: "Well, then what is the man who leaves his party, and comes over to yours?"

Veteran Politician: "A convert, my son."

SURGERY OF THE THYROID IN CHILDREN*

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Thyroid disease in adults we are familiar with and the literature during the last ten to fifteen years has been fairly full of varied discussions of its many phases. However, only in the last few years have we found any reference to this devastating disease in children. In the hope of stimulating a little more interest in these cases which require early diagnosis for satisfactory treatment, I have chosen this phase of the thyroid problem for a brief discussion.

Physiology. Without going into a review of the physiology of the gland may I remind you of the experiment of Gerdernatsch and Swingle in which they found that when tadpoles were fed on thyroid substance there was a rapid metamorphosis into frogs without any associated increase in the size of the animal; and contrary to this thyroidectomized tadpoles continued to grow and become large tadpoles but metamorphosis into frogs did not take place. It is generally recognized that there is a very definite interrelation of the various members of the endocrine family and Biedl states that the thyroid plays the greatest role of all the endocrine glands.

Etiology. Heredity evidently either directly or indirectly plays some part in the disturbance of the thyroid gland. It is not unusual to find quite a group of goiterous patients of the same type or different types in the same family. Sweet reports a case of goiter in an infant at birth one-fourth the size of the infant's head, whose mother had a colloid goiter. Climenko reports a series of cases in one family in which the mother and two daughters and a child of each of the daughters, one a boy and the other a girl, had the disease. It is believed by some that in regions of endemic goiters a lack of iodine in the mother's organism may cause a failure of thyroid development either in fetal life or shortly after birth. The absence of iodine is, of course, one of our pet theories and the frequent occurrence of especially exophthalmic goiter following acute nervous shock or acute illness is recognized.

Hypothyroidism. The hypofunctioning thy-

roid may be of varied degree. But, regardless of the degree the earlier the diagnosis is made and proper treatment instituted, the greater the hope for improvement. The diagnosis in children is largely a clinical deduction. The average parent does not expect much of a baby a few months old and if he appears to be very quiet and slow in noting his surroundings, he or she is said to be a good baby and too young to expect much of. It is quite infrequent even for a pediatrician to see one of these babies before they are six months to a year old. Many of the milder types are not recognized until a teacher notes something is wrong when the child enters school. To facilitate discussion we may divide the symptoms into physical and mental. The mental state may vary from sluggishness to a near imbecile. Engelbach claims that about 70% of the children showing anomalous development during the first year of life, in the following forms, are hypothyroid:

1. Weight of more than eight pounds at birth
2. Eruption of the first teeth later than the seventh month

3. Walking later than one year.
4. The use of short sentences later than one year.

Numerous other signs may be outlined:

1. Late closure of the fontanels
2. Subnormal temperature
3. Cold extremities
4. Dryness of the skin
5. Coarse and dry hair
6. So-called goose flesh skin
7. Late separation of the cord
8. Umbilical hernia
9. Distended stomach
10. Thick tongue
11. Gaping mouth
12. Marked constipation

The extreme of the above findings is of course the cretin with its general distribution of fat, more especially localized to the dorsal of the foot and wrist, supraclavicular region, and the shoulders. The utterance of uncouth sounds, usually rather deep throated and meaningless, should certainly be considered with suspicion.

Diagnosis. The diagnosis has to be based mainly on clinical findings. The x-ray study of epiphyses of the bones may be of considerable aid to diagnosis. The bones of all new born babies who are over weight should be x-rayed, according to Engelbach.

Treatment. Treatment may be divided into preventive and curative. There is a quantity of evidence that the study of the basal meta-

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bolic rate of gravid women offers some hope for lowering the incidence of hypothyroid children. McGarrison claims that one out of every twenty goiterous mothers gives birth to mentally defective or imbecile children. He further reminds us that the goiterous girls of today are the goiterous mothers of tomorrow. A normal increase of the rate from plus 15 to 25 at about the third month should be expected. Engelbach strongly maintains that the clinical examination of the expectant mother should include a basal metabolic rate and if found hypothyroid, gland therapy should be instituted.

The result to be obtained from curative treatment of course depends largely on how early it is established. Mild forms with early diagnosis will become practically normal. The physical recovery in delayed cases is much more gratifying than the mental recovery.

Exophthalmic Goiter. Exophthalmic goiter, while perhaps not common, is by no means unusual in children. It is quite often overlooked because it is not generally associated as a child's disease. Some of the so-called choreas on further investigation will be found to be true exophthalmic goiters. In other words, if we are not goiter conscious we may overlook this disease. The causes may be attributed to the same etiology as those in adults. The symptoms are the same as those of an adult: nervousness, emotional instability, heat intolerance, rapid pulse, dyspnea, excessive appetite, increased blood pressure and at times the crisis picture with its many misleading clinical manifestations. Though some writers claim it is more gradual in onset in children, in my own experience it has been very rapid. The weight loss may not be as marked as in the case of adults, due perhaps to two factors: we are dealing with a growing organism, and the natural weight gain of growth may at least partially reduce the total weight loss. On the other hand, the disease is so acute and fulminating that the other symptoms outdistance the weight loss. This may be understood when we consider how readily these young and active organisms respond to a stimulus of any character.

The basal metabolic rates are not of much clinical import in the majority of cases for two reasons: the inability to obtain the proper co-operation which is so essential, and the present

type of calculation is not adapted to growing children. It has been suggested that perhaps if the calculation were figured on height alone it might be better.

Treatment. Treatment may be considered, first, as preventive, in the form of iodine administration in endemic areas, and proper medical supervision when there is a hereditary possibility, second, the curative treatment which is surgical with careful premedical preparation. Lugols is administered as with adults. The diet is also increased and a high caloric diet is advisable. It is not necessary to keep these patients in bed, even if it were possible, though they should not be allowed to exhaust themselves. The period of preparation must usually be much longer than in adults. A high fluid intake should be insisted on. Operation should be approached with extreme care as they are susceptible to the least stimulation and may have a very marked postoperative reaction.

On the basis of this many surgeons recommend a two-stage operation. Even in some cases a preliminary ligation is recommended. I have not found this necessary but have adapted my procedure to the particular case and the reaction at the time of operation. We do advise, however, a preliminary narcosis and the operation is then performed under ethylene and local anesthesia. Postoperatively they are treated as adults. Care should be used in not removing too much thyroid in these children, and we make a practice of leaving more gland at operation than we do in adults. The reason is evident. We are dealing with a growing organism which requires more thyroid tissue than adults as the thyroid plays a considerable part in mental and physical development.

Although Helmholz claims that adenomatous goiters never become active in children, Hertzler, on the other hand, claims that at times one of the reasons for the slow improvement in the symptoms in exophthalmic goiter on preoperative treatment in children may be attributed to the fact that we are dealing with a mixed type of case. Adenomatous or cystic goiters are very infrequent in children and rarely, if ever, become active, and when present are usually of fetal origin. Occasionally we have to deal with them because of their pressure or mechanical effect. The adenoma in the thyroid is often overshadowed and included in a colloid

goiter. Once in a long while the child will have a sudden and acute swelling which is the result of an acute hemorrhage. I have had one such case.

Adolescent Goiter. This is perhaps the most frequent type of thyroid enlargement noted in children. And though often mentioned, little or nothing is written on it in the literature. Some think it is a normal physiological enlargement. We feel that it is a fore-runner of more thyroid disturbance. Many goiters in adults date back to the first thyroid disturbance which was noted at puberty as a fullness of the neck. Invariably the presence of a so-called adolescent goiter shows a low functioning thyroid which is not able to stand the strain of the readjustment necessary in the endocrine system at that time. It is, therefore, good reasoning that they may need not only iodine but perhaps a little thyroid until their adjustment at least has taken place. At times in these patients with adolescent goiter we may find what has been called a disfunctioning thyroid which on one examination appears hypothyroid and on another hyperthyroid. This, of course, is the result of an attempt at adjustment of a low functioning thyroid. These patients should be kept under close observation. Care should be used in the administration of thyroid as well as iodine. The presence of an adenoma in the colloid of the adolescent goiter may not be noted until practically all of the colloid may have disappeared with administration of iodine, leaving a small nodular mass in one lobe. Associated with the loss of colloid we may have a hyperthyroid reaction which disappears when iodine is stopped, but the colloid reappears.

Conclusion. In conclusion may I emphasize the following points:

1. This paper is given with the earnest hope that interest may be increased in the study of the diseases of this very important gland in children.

2. That the earlier the diagnosis in hypothyroid cases is made the better the results of treatment.

3. In delayed treatment of hypothyroid cases more can be expected in the improvement of the physical than the mental state.

4. Exophthalmic goiters appear in children

and are a more treacherous disease than in adults for the following reasons:

- a. It requires a longer period of preparation.

- b. The postoperative reaction is apt to be worse.

- c. Cooperation cannot be expected.

5. Less gland should be removed at operation than in adults.

6. That adolescent goiter is not a normal physical enlargement but may be considered an indication of future thyroid trouble and should be properly treated and watched.

DISCUSSION

John R. Vonachen (Peoria): From the standpoint of the clinician or pediatrician, I agree with both Dr. Bowen and Dr. Murphy in regard to basal metabolic rates in the young child, but I think we should use these in the older children as a guide post and I think this is borne out clinically by results obtained. If we follow these cases with basal metabolic rates, the average child of eight years and over can give very definite cooperation, and I think particularly in the hypothyroid cases if you follow these cases through after you have given them thyroid extract you will find that your basal metabolic rate will be a good guide for treatment.

What we see particularly also is the type of adolescent goiter which can be guided very nicely by basal metabolic rate. In this type of case I think if we are to advise the patient concerning operation we should go about it in a very cautious way, as so many of these cases improve definitely after they are over the adolescent period.

In regard to adenomas, I agree with Dr. Bowen. If you have a greater enlargement on one side than on the other, and along with this a hypothyroidism and where the adenoma is destroying a great deal of thyroid tissue, I believe we should consider surgery in these cases.

Dr. Bowen has covered this paper very thoroughly and is to be complimented.

Dr. Bowen (closing the discussion): I appreciate the discussion of both Dr. Murphy and Dr. Vonachen. In regard to what Dr. Murphy said, I think we cannot emphasize too much these things. I think the obstetricians perhaps not as a whole, but at least a few, are a little negligent in paying enough attention to this. I realize it is doing away with business for me for the future, but I agree with Dr. Murphy that this is the place to prevent hypothyroid cases, especially in this district.

What Dr. Vonachen said in regard to the metabolic rate is important. It is not, after all, the one rate that means the story; it is a series of metabolic rates. From an economic standpoint these days, it is rather hard. It costs quite a little money to have metabolic rates. Sometimes we have a little trouble in getting patients to spend the money to have a series of metabolic rates, but it is the series, especially in a child with adolescent goiter,

which gives the comparative scale on which to work. Whether the rate in itself as compared to adults is hyper or hypo does not make a whole lot of difference. I shall illustrate in a case of this type.

We had a patient, a girl of ten years, with a metabolic rate of thirty-five minus. Clinically she was not minus thirty-five. This was checked on several occasions and it was found to be still thirty-five minus. On half a grain of thyroid, she improved quite a little. On two grains of thyroid a day, the metabolic rate became normal, but comparatively, on the basis of an adult rate, she did not show sufficient clinical evidence to warrant a return to normal. But for the child itself the comparative rate is very important.

I launched into this subject largely to start some interest in these thyroid problems in the child. We occasionally get a definite case in which there is a seemingly degenerative process in the thyroid which to all intents and purposes is a colloid goiter, but we later discover a tumor in one lobe which continues to grow in size in spite of all medication, and a child progressively becomes more hypothyroid. This type of case I feel should be operated on. We occasionally see typical exophthalmic goiters in children. The youngest I have seen was four years old. This I feel is surgical also with the exception of these two types and the occasional hemorrhagic cyst, and care should be used in operating on thyroid in children.

THE MASTER IN THE HOUSE OF MEDICINE*

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I.

My title makes two assumptions, the first, that medicine still has a house and the second, that there is a master in the house whoever that master might be; assumptions both, which in the minds of some people, are rather violent and require some form of vindication. For there are not a few, who priding themselves on their genius for the obvious, insist that medicine has long since forsaken its house and has walked perhaps in amnesic somnambulance into unaccustomed bypaths trespassing unconsciously upon the domain of the pure scientist, or the sociologist, or the economist, or the legal expert. There are those too, who insist somewhat cynically, to be sure, and with not a little irony, that medicine, in its decadent senescence needs the stimulation of new ideas. They think it needs to be galvanized out of its over-stuffed settee where it has sunken in contented medioe-

rity watching some of its recent progeny flock about, possessing the house that was medicine's, somewhat like Sir Walter Vivian's visitors in Tennyson's "Princess." For Sir Walter

"All a summer's day

Gave his broad lawns until the set of sun
Up to the people; thither flock'd at noon
His tenants, wife and child, and thither half
The neighboring borough with their Institute,
Of which he was the patron."

"And there we saw Sir Walter where he stood,
Before a tower of crimson holly-oaks,

* * * * *

A patron of some thirty charities,
A pamphleteer on guano and on grain,
A quarter-sessions chairman, abler none;"

Of course this is a strange picture for those of us who still regard our mythological patron, Æsculapius, as the traditional personification of medicine; a splendid personification, for Æsculapius was the son of Apollo, the god of light and beauty and fertility and manly strength. Today, if we had to choose from the galaxy of gods, the one whom our present trends might best inspire us to choose as our patron would probably be the fleet-footed, winged-heeled and winged-capped Hermes, Æsculapius' uncle, for his were the characteristics of inventiveness and versatility with fascination, trickery and cunning, a god, strange to say, not only of thieves, tradesmen and agriculturists but also of the pharmacologists and perhaps the biochemists if they had them in those early mythological days.

Who now is the master in the house of medicine? The question is today rather interesting because it has been recently answered. The answer has come as the Report of the Committee on the Costs of Medical Care. In its very first dictum under the section entitled "The Philosophy and the Intent of the Recommendations," the Committee tells us that the solution of the problem "of providing satisfactory medical service . . . will be of immense economic and social significance." Economics and sociology are here apparently nominated as masters in the house of medicine. In its first recommendation, the Committee nominates another candidate for this mastership "organization." Physicians, dentists, nurses, pharmacists, hospital officials, should all be organized. In the second recommendation, there occurs still another

*Address Before The House of Delegates. Illinois State Medical Society, Peoria, May 1933.

nomination for master of the house of medicine, the official health department around which, as a hub, so one may easily understand the recommendation, the medical profession will wheel us all in our course to universal health. And in the third recommendation, there is still another nomination for this master of the house of medicine, the great god of Finance, through whom the purchase of medical care on a group payment basis, on insurance plans and on taxation schemes is to be made more effective. And I regret to say, in recommendation four, another nominee appears, a weighty one, a dignified and ponderous one, the god of Centralized Control, for we are told that "the study, evaluation and coordination of medical services should be considered important functions for every state and local community." Surely, the recommendations of the Committee have put forth enough nominees for the master of the house of medicine. Each has a platform upon which to base his claim; each has a program which is to form a panacea for some, if not for all the ills from which the old master of the house is suffering; each is prepared to wage a campaign, vigorous and virulent in vindication of his claim to dominance. A formidable array of worthy candidates—economics, sociology, organization, finance, official health agencies, public control. Where among all these is medicine itself? Who owns the house of medicine? And to whom has the house of medicine for centuries upon centuries belonged? Are we to forget the good old adage that "possession is nine-tenths of the law" and that other adage that "a man's home is his stronghold"? To vindicate the rights of medicine, just a tiny voice called the Minority Report was raised. And the Minority Report dared insist that perhaps the master in the house of medicine should still be considered medicine itself.

II.

In making these comments, I would not be understood as under-valuing in any sense the enormous contributions which the Committee on the Costs of Medical Care has made not only to medical economics but even more specifically to many other phases of medical practice; to our understanding of the social relations in medicine and of the public health significance of medical practice, to the inter-relationships between voluntary and official health agencies,

to our grasp of the intricate inter-relationships between medicine and many and diverse public interests. On all of these classes of questions and perhaps on many others, the work of the Committee has accumulated vast masses of data which probably could have been assembled so effectively and completely by no other group possessing similar facilities in an equally short length of time. That all of this information is of enormous value in the cultural history of our nation can hardly be successfully denied by any thinking man. If, therefore, the final results of the Committee's activities have failed to commend themselves universally and particularly, if they have failed in impressing the medical profession as a whole, my explanation is only this that the Committee members were carried away by an overwhelming sense of responsibility to the public at large, a sense of responsibility which obscured the clear vision of the means by which the health betterment of that public could be best safe-guarded, namely, the progressive and ever-accelerated development of the one profession to which is entrusted in our scheme of things, the maintenance of the public's health and its restoration to health after sickness.

The Committee understood too well its sociological, its economic, its organizational, its financial and similar problems, but understood too little the character of its medical problem. It saw the masses and forgot the individual who makes up the masses. It saw the distant vision but it saw not the single man who stood close at hand. Enamoured of the future vision, it was blind to the near reality. Carried away by long distance planning, it forgot that such planning is conditioned upon the satisfaction of immediate needs. The far-off mountain seemed so near that the chasm in the foreground was completely overlooked. All this is my view of the Committee's work. It made nominations for the dominance of the house of medicine and forgot that medicine is still and must continue ever to be master in its own house.

III.

Let me single out for special discussion the strategies and sorties of three separate challengers of medicine to the ownership of its house. All three challengers are generals in the socio-economic-political army each leading

his separate division to lend force to his challenge.

The first of these challengers might be called Efficient Mass Production. It must be admitted that he has many seemingly convincing claims to the ownership of medicine's house. The statistical data amassed by the Committee proves perhaps to demonstration that the people need a substantially larger volume of medical service than they now utilize; that modern public health service needs to be extended to a greater percentage of the people and to hitherto uncared for areas; that a geographical redistribution of practitioners and agencies must be effected.

How does the Committee propose to meet these needs? The majority of the Committee recommends that medical service should be furnished by organized groups, these groups to be organized around a hospital for rendering complete home, office and hospital care. This being effected, the community possesses what the Committee itself calls its "most fundamental specific proposal" (page 110), its own community medical center. The Committee suggests the intensive development of medical service, the more effective utilization of subsidiary personnel, the expansion of the private group clinic, of the pay clinic and of middle rate hospital service, organized nursing service, and of clinics controlled by county medical societies.

Are these recommendations a real answer to the needs? They rest, they seem to me, upon a false assumption that mass production can be effected in medical practice just as it can in industry. They lose sight of the differences between human beings and machines, between the physician and the mechanic. We may teach a mechanic to assemble with ever-increasing efficient speed the parts of an automobile and to fit each such part into a pre-destined and pre-planned place; we cannot teach the physician to treat the diseased organs of one human being as he would the corresponding parts of another human being even under what are ostensibly the same conditions. Symptomatology was at one time thought to be indicative of a disease; today it has become indicative of an individual's characteristics and constitution. No matter how many patients he has, if the individual doctor fails to treat each of these cases with as much care approximately and with as strong a

sense of responsibility as he would have if this were the only patient under his care, the physician has fallen short of the legitimate expectancy of his clientele.

The fundamental reason why the individual patient cannot and must not be treated as a member of a large group is because of his uniqueness. Let us not forget our fundamental biology. Biochemistry, genetics, physiology, pharmacology, the science of immunity, all these and many others of the fundamental and the clinical sciences are insisting with constantly increasing emphasis and with reliance upon rapidly amassing evidence not upon what used to be called the clinical disease entities but rather upon the individuality of each of us. We have learnt to lay less stress upon similarities and more stress upon dissimilarities. In medical practice the *laissez-faire* adage that "exceptions prove the rule" finds no application; rather does medicine say, when there are exceptions there is no rule. Many a page of biological history has been turned since the day when Huxley could insist that the protoplasm of the cow and the protoplasm of the grass devoured by the cow are the same protoplasm. Our research laboratories have shown us that we can no longer think of one uniform basis of life but that we must look for individual differences in protoplasm when genus is compared with genus, species with species, sex with sex, individual with individual, organs of one individual with the corresponding organs of another individual, yes even, not to labor the point too much, when one cell is compared with its contiguous cell in the same tissues. Medicine has derived from this viewpoint the principles for its greatest conquests. We have learnt to understand constitution, allergy, heredity, hormonal control, the so-called idiosyncracies, all these and other phases of medicine too numerous to mention are each an emphatic insistence upon the differentiation of each of us among our kind.

How then in the face of all of this can we still insist upon mass production and efficiency in medical practice? All that we have learnt recently is a plea for the individual care of the individual patient by the individual physician. Only the latter can synthesize effectively and to the patient's best interests the pieces of the complicated jig-saw puzzle that are supplied to

him through his stethoscope and microscope, through his test tube and stop watch, through his eye and ear and hand. To be sure, there are limitations to this insistence upon individual practice but when the exigencies of modern medicine and the public's needs demand, let us grudgingly rather than gladly yield to the hurry and scurry, the scramble and scuttle of wholesale practice. It is one thing to practice wholesale medicine through need and pressure with regrets for one's neglected ideals, and it is quite a different thing to convert wholesale medicine into a routine which progressively metamorphoses into an established objective. I can also understand that under certain carefully controlled conditions with broadly trained, widely visioned leadership and in an environment of cautious and scientific clinical thinking, the mass practice of medicine can be made to yield results of outstanding value. But I submit that even then those results are achieved not so much through mass practice but rather through the superior leadership in such a group as well as to its superior facilities. The Romans had a proverb which can readily be misunderstood but which nevertheless contained many a germ of many a great thought "*quod licet Jovi non licet bovi.*" We know that the same words in the mouth of poet and peasant have a different meaning, the same action of banker and baker a different significance. The efficacy of medical centers does not rest in the institution as a medical center but it rests in the mental and material soil in which it is planted, in the administrative offices where presides the controlling mind and heart, in the laboratory where the chemist, the pathologist and the clinical microscopist sees or sees not the facts that are revealed to the understanding eye. To recommend the development of medical centers and to ignore a recommendation for the installation of those within the medical centers who alone can give them meaning and life, is to me nothing more than to build caskets for our defunct ideals.

There are many other considerations which might well enter into the story of mass production's onslaught upon the mastery of the house of medicine. Let me pass them over with but a brief mention. I can think of mass practice of medicine as advocated by the Committee for general adoption as nothing else than merely

yielding to the present needs at the sacrifice of future good. I can think of it only as offering a prognosis of progressive deterioration in ideals, as a shield for the less able, the less industrious, the more mercenary in medicine, so that they might hide behind the men of solid achievement, of continued application and unselfish dedication. Let us not lose sight of human nature. Of all the professions, medicine is perhaps the one in which insincerity is most promptly uncovered; perhaps the one in which the blackness of incompetence and quackery is most easily dispelled by the bright light of science; perhaps the one in which the stumbling of the stupid is made more easily apparent. Yet with all this, medical men are still human and as long as humans are, the easiest way will be for all too many the way of choice.

Mass practice must never dispossess medicine of its ownership of its house.

IV.

The second of these challengers to the ownership of the house of medicine is Organization. All through the Report and the many other studies which lead up to its final formulations, thoughts are stressed that our difficulty is not so much with the number of individuals concerned directly or indirectly with practice of medicine, but rather with the lack of coordination of effort in this vast personnel of more than a million. All through the keynote is sounded that it is not so much inadequate expenditure as it is ill-advised expenditure which has brought our needs to unbearable urgency. And so the shibboleth echoes through the recommendations. "Organize everybody and everything; organize the doctors, the dentists, the nurses, the social workers, the pharmacists, the hospital officials, the midwives, the hygienists; organize resources—the buildings and grounds, the laboratories and admission offices, the hospitals and social centers, the out-patient cubicles and the in-patient beds; organize the funds—donations and dues, patients' payments and community contributions. Organize the community itself for better health care. Break down the barriers of race and creed of national and political affiliation."

Now it cannot be denied that if the voice of some great dictator were to ring with the force of Gabriel's trumpet through the hills and vales

and plains of the land, much might be accomplished through organization. And yet, like the faint trilling of the cardinal on a late spring sunny day above the roar of Niagara's Falls comes the plea of the Minority, whispered through the thunderous boom of the Majority for the restoration of the general practitioner to the central place in medical practice. With what timidity the poor Minority must have written its fourth recommendation! Surely, they must have felt as sheepish and apologetic as if they were recommending the substitution of a horse and buggy for the modern palace on rubber tires. They could not but have felt as timid as if they had called for side burns, Prince Albert and silk hat as substitutes for the dapper toggery of the just doctorated medico. And yet, the general practitioner owned and some of us think still owns, the house of medicine.

First of all, I cannot bend my good Catholic knees before the god of Organization. It is true we have long since celebrated his apotheosis, but something must have happened when he reached Olympus. Today, like Vulcan when he was shown the door and came tumbling down, organization limps. Somehow we have lost confidence in his omnipotence and perhaps some of us are even sacrilegious enough to deny him divine honors. The catastrophes of the last few months have made scoffing skeptics of us all. And now we want to organize medicine and to organize it not as biology teaches. All true organization must be effected through the pressure of internal forces through which the organism is maintained and not through the coercive pressure of external forces which molds inert matter alone into forms and shapes. I contend that the profession of medicine is not as yet inert matter; it is still a living, vibrant group of men who know their own minds and hearts, their own ambitions and longings, their own capacities and achievements. Yes, I too desire the more efficient organization of medicine but I want that organization to come not from without but from within the profession. I want the profession to differentiate itself to progress to ever more refined forms of specialism, but all this in response to the superior needs of the profession working out its own destiny for the betterment of its own service to a community standing in need of that service and not through the pressure of alien forces

that would mold it like passive clay into mere caricatures of the sublime form which it has set as the goal of its own development. Again, I say, let us not forget our biology. Organization from within never destroys the morphological and physiological traits of the developing organism but brings them rather to their termination. Organization from without restricts, contracts or expands here and there in response to pressure variations and the resultant may be a misshapen mass. Medicine as we have it today in our country has fulfilled a great destiny. It is all but unintelligible that now when medicine is celebrating day after day progressively greater triumphs and is giving progressively more convincing evidence of its interior life and is even in the face of the restrictions and privations of the last few years, humbly glorying in the fact that it alone among the major forces in human society has preserved the health record of the nation at a level of excellence never before achieved, we should be clamoring for more organization. It seems little short of blindness to facts that just when medicine has best shown that it can use its liberty and depends to a degree equalled perhaps in terms of service by no other of the professions dealing with man's physical life, we should attempt to shackle its freedom.

The question clearly is this, shall the mastery of the house of medicine be entrusted to the individual practitioner or to a sort of house committee which might be called for convenience some form of group clinic? Strange to say, both the Majority and the Minority groups unqualifiedly endorse the maintenance of the personal relations between the patient and the physician. It is amazing what different meanings these two groups have discovered in this personal relationship. Old Aescop was right when he said that a great deal depends upon whether the song, though it may be the same, comes from the throat of starling or of crow. Somewhere in the definition of a satisfactory medical program the Report tells us that (page 39)

"preservation of a personal relationship between patient and physician is an essential element in safeguarding the quality of medical practice."

Then the Committee goes on to define this medical practice and suggests two phases of medical practice as essentially embodying this personal relationship. First, the safeguarding as

inviole of the privileged communications between patient and physician and secondly, the continued mutual responsibility between patient and physician. It states expressly

"the business relation between physician and patient is not considered a necessary part of the personal relation."

As if to strengthen this position a few paragraphs further down the Committee again comes back to the question

"there is nothing in any way mysterious in the relation between a patient and a physician. On the therapeutic side it is capable of complete objective analysis. As to those phases which are not strictly medical, it is of a piece with all satisfactory human relations involving as they do mutual patience, sympathy, understanding, and confidence." (Page 41.)

The Minority seems to take a somewhat different view (page 169)

"By personal relationship is meant that bond of sympathy and interest in the patient's welfare on the part of the physician, confidence in the ability, integrity and discretion of the physician on the part of the patient, and mutual regard on the part of each for the other which cause the patient to disclose for the purpose of diagnosis and treatment the most private and confidential information concerning himself and his surroundings when necessary for proper diagnosis and treatment. The character and personality of the physician is a major factor in its development and in process of time and continued contact as patient and physician a friendship and intimacy develop that assumes priestly characteristics on the part of the physician—the characteristics of the confidant and adviser in the most intimate personal and family relationships. All phases of personal and family life are at times closely related to the diagnosis and care of an individual's condition, and economic and financial conditions are often as important in diagnosis and care as physical or mental abnormalities. It is an individual relationship, the product of character and personality and cannot be transferred to a group or fostered by group practice."

Again let us remember our fundamentals in biology. We have heard it stressed ever so often in the days of our undergraduate courses that the organism's reactions at any one time are the product of internal and external forces. Not one added to the other nor one multiplied by the other but one set of forces integrated into the other in the sense in which calculus perhaps teaches us to integrate. There is this strange fact in the interplay between organic and environmental forces, that, as the organism reacts to an extrinsic force, it itself changes and forms not the same old, but in many respects

a completely new source of new reactions in the second instant of an extrinsic force's influence. There is progressive change in the organism during the separate and separable instants of the organism's reactions. If we have learned to view disease and illness from this viewpoint we see the fundamental correctness of the analogy I am here suggesting. It is not enough for the physician or the social worker assisting the physician to have once determined the external environment of the patient, to have tabulated these and classified those conditions, but all through the patient's illness the progressive changes under the stimulation of the new environmental factors must be studied, not only with relation to the pre-sickness condition of the patient but also with relation to the gradual organic modifications. If I should care to admit, for the sake of argument, that much of this is largely theoretical and difficult to reduce to practice, I still maintain that it is a fundamentally sound conception and one which consciously or unconsciously the physician who is in close, intimate touch with his case not only understands but actually uses. The modifiability of the patient's behavior under medication, the antagonistic or synergistic action of drugs, the psychological interplay between patient and physician, between nurse and physician, between patient-nurse-hospital personnel and physician, all these, and many other examples that may be offered, illustrate the principle that during the therapeutic processes not only environmental conditions, but the organism itself is changing and is being made the center of a constantly shifting and changing set of reactions. To my mind the Minority has more closely grasped this very fundamental thought when it says

"that all phases of personal and family life are at times significant in therapeutics"

and I believe the Majority has profoundly failed in its formulation when it insists that on the therapeutic side the relationship between patient and physician is susceptible of completely objective analysis. There are more intangibles in sickness than there are in health and these intangibles become progressively multiplied the more serious the patient's condition becomes, to reach a climax of complexity as the final moments of life are approached, even after the physician has explicitly or implicitly pro-

nounced his inability to cope with the disease. I for one should not want to be responsible for the effect on the nation if this phase of medical practice is minimized nor should I desire to be responsible for the blurring of that idealism in the life of the physician or in darkening of the public's attitude towards it which would result from making light in any way of the sanctity, and if need be even the mysteriousness of that relationship between the sick man and his doctor.

If some one wishes to tell me that I am confusing two ideas in this presentation, namely, that I am assuming that personal relationship can be maintained only in the face of the general practitioner's place in medical practice, I have many reasons ready for my position, some debatable and, to my way of thinking, some entirely undebatable. Only one do I wish here to single out and that is the testimony of the Report itself. I have called attention to the fact that both the Majority and the Minority insist upon the maintenance of personal relationship. The Minority draws from that principle the conclusion that, therefore, the general practitioner must be returned to his central place in medical practice. The Majority was able to use the principle in its advocacy of some form of group practice only by attenuating the meaning of that relationship and giving it a definition which, while not invalidating the logic of the argument, still negates as I see it, all that we have been accustomed to think of when we insist upon the importance of the personal relationship between physician and patient.

If now we insist that it is impossible under the present conditions in the practice of medicine to restore the general practitioner to his place of honor even if we wish to do so, my answer is plainly this, that unless we do so we must be prepared for a re-definition of the practice of medicine from sources that are not medical. We must be prepared to give up what we have hitherto understood by the term medicine and we must accept in its place all the inferences and correlaries that will grow from the conception of group practice. The Minority has suggested that the general practitioner can be restored to his place even in the face of the present complexities of diagnosis and therapeutics. It recommends not only intensively better preparation for the medical man and a

growing sense of responsibility among medical educators for supplying the needs of the nation, but particularly does it call attention to the fact that in our medical curricula the stress must be laid rather upon the practice of medicine than upon the practice of specialty, rather upon the organism as a whole than upon its histological, or physiological, or biochemical or bacteriological reactions. This does not deny the validity and dignity and the deep significance to the nation's health of progressive specialization but, as I have already said, it is one thing for specialization to emerge from medicine's epigenetic self-determination, one thing for specialization to be the outgrowth of recognized needs in practice, and quite a different thing for specialization to be the resultant of extrinsic coercive forces or merely the pro forma denomination adopted to make the letter-head of group clinics more impressive to the public.

Who is master in the house of medicine? I hope and pray that the general practitioner with all his faults and all his shortcomings and all his limitations may still continue as the central dominating figure in the house of medicine.

V.

Ringing through the Committee's discussions like an obligato in a minor key runs the motif that builds itself up slowly but surely into a haunting spectre and that haunting spectre is the tremendous charge that the practice of medicine as heretofore in use is out of date. And oh, what more terrible thing could be said of any social factor today than that it is hoary haired and senescent. And against the background of this charge there emerges the third claimant to the mastery of the house of medicine, sprightly, spruced-up, spick and span, the claimant of professional evolution. Commentators on the Majority Report have stressed so often the thought, that they advocate, to be sure not radical revolution but only progressive evolution. Perhaps our sympathies go out more to these claims for the mastery of the house of medicine than to the others because our sympathies go out to youth but perhaps also wisdom of age might speak just a word of caution, even in this day when we are living in the age of the young man.

The argument, I suppose, should run some-

thing like this. We have passed from an age of super-individualistic to an age of sociological thinking. We have by dint of common effort succeeded in bringing the sociological viewpoint into legislation, into commerce, into international relations, into labor and trades, into school and churches. Through extensive propaganda, we have succeeded in all of these human endeavors to substitute a consideration for the masses instead of the old considerations for the individual. Why should we leave the profession of medicine out of this universal social flood? Why should medicine stay behind in this forward movement?

On the face of it there is something intensely attractive in such a formulation. I submit, however, that there are considerations which will show that medicine cannot wholeheartedly and completely participate in such a drift if it desires to remain true to itself. I cannot accept the principle that a something is desirable just because it is new. I am still enamored of the Coliseum and of the pyramids and of the monuments of Assyrian culture and even of the art of the cave man in the Pyrenees. I have a suspicion that some of the things of life which I most value were just as valuable to primitive man, and so I am not over-impressed by the claim that medicine must have a new viewpoint, an eye to the future. Of course, neither am I blind to the fact that we are living in the year 1933 and that we are expecting to plan for at least a year or two more in our educational program in medicine, but it is one thing to say this and quite a different thing to plan for 1980 when between then and now there still intervene a few years. Haven't we become just a little fed up on this long distance planning and on directing the nation's course for half a century? We have even become a little skeptical about the five-year programs both on the international as well as upon national levels.

Now of course we all want to be modern but are we going to forget that the future is a child of the past, are we going to forget that the true view of history teaches us that history is a prophecy rather than merely a record? There are certain phases of life that must run on continuously and uninterruptedly through human experience, and fundamental principles cannot in any true evolution be completely ignored. I know we are living in a sociological

era, in an era when economic factors and sociological factors have developed a significance which perhaps they have never had before. I know, too, that sociological and economic thinking have found their way into medicine. With all of this I am in complete and hearty accord. I hope all this may continue.

Let us again examine the situation briefly from the viewpoint of what seems to be incontrovertible principles. A profession, like an organism, must adapt itself to progressive changes. Let us note, however, that the first and foremost requirement for adaptation is the organism's or the profession's self preservation. Change is significant only if the organism remains. If the organism does not adapt itself to changing environment it will destroy itself. But note too, and here is the point upon which I am throwing the emphasis, if the organism over-adapts itself it will also destroy itself. Adaptation does not mean a merging of the organism with its environment. Essentially it means the maintenance of a measure of isolation, the maintenance of individualizing traits and characteristics, the maintenance of internal factors which must not so yield to extrinsic factors that they are completely neutralized. On the basis of this analysis I insist that medicine is not sociology and medicine is not economics and medicine is not organizational efficiency and that the future of medicine, the real progressive evolution of medicine, demands that medicine be allowed to develop as medicine and not as merely an adjunct to social science. I am not one of those who insist upon pigeon-holing into separate compartments the diverse and varied interests of mankind. Human interests must not be kept in hermetically sealed compartments. But recognizing all of this, we must still insist that neither are we furthering progress by obliterating the individuality and the differentiating characteristics of the many vocations and avocations which concern themselves with the contrasting phases of life.

Pursuing this thought a little farther, I should like to insist that medicine must become progressively conscious, if necessary emphatically conscious, in the face of popular clamor, of its own intrinsic dignity. It has a character to maintain. If "noblesse oblige" is still the watchword it was, then the medical man had better not make himself the tool of an insurance

agency, had better not make himself an under-paid servant of a policy holder, had better not make himself merely the scribe to whom a financial power dictates what he is to write into the blank spaces of an accident report. Not in that direction lies progress no matter how much we clamor that this day is the day of social thinking and financial remedies and corporate relief. I might add paragraph upon paragraph on this point. Let me briefly summarize a few of the views which have grown out of the principles advocated by the Minority, some of them clearly expressed, others barely implied. An insurance plan which takes away the freedom of the physician in his practice of medicine and substitutes financial expediency for medical policy is not good medicine and I believe, is not even good insurance. An insurance policy which takes medicine out of the central place in relation to the patient and relegates the medical practitioner to the periphery of interest leaving the premium collector at the hub of the wheel is bound, I think, sooner or later to throw the medical man off of the wheel altogether and leave the financial agent in charge. Plans for part or deferred payments which substitute financial need for the patient's medical need, which elevate financial administration to the commanding position in place of medical care, are to me, not signs of progressive evolution and thinking in terms of up-to-the-minute values but they are to me, symptoms of medical devolution. When such plans and schemes are in force you may be purchasing something for your policy holder but you are not purchasing adequate medical care. I can concede that under certain rather well defined circumstances some form of corporate practice in medicine or corporate payment for medical service is clearly indicated. It is one thing to let such plans develop in response to local or general needs. It is a different thing to elevate such a situation to the dignity of national policies.

And anyway, is economics after all so much of a god to be worshipped? There are other values in life besides the dollar sign and I have a suspicion that they are just as much up to date. Money after all is only a symbol of barter. We may barter away through money exchange some of the things which even money later on cannot buy back. Let the idealism, the self-respect of the medical profession, its quasi

sacred character, the passion for excellence be traitorously sold for silver and you may well find yourself the instigator of a crucifixion not merely of the profession but also of the public's welfare. We are not of those who must by virtue of our dependence upon public opinion allow themselves to be wafted hither and thither by the ever veering breath of public opinion. We are rather the leaders and teachers of public opinion. It is not for us to yield but to lead, to educate, to idealize; our eyes are not to be cast down on the ground. Our feet, it is true, must rest on solid ground lest we drift away into aethereal regions of impracticality but our eyes must be up-lifted and our hands must be raised not to point out the paths where the masses will tread without us but those paths of higher achievement which mean progressively higher and nobler things in life.

VI.

And so, gentlemen, I have put before you the claims of three pretenders. I believe personally that their claims are weak. I believe that their following is half-hearted, that the resources behind them are inadequate to cope with the responsibility which they foolishly and ignorantly desire to assume. And I for one am prepared to vote them out of the mastery of the house of medicine and to leave medicine in control of its house.

WHAT I WOULD TELL A LAY AUDIENCE ABOUT VENEREAL DISEASES

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I would tell them that in Illinois there are annually 13,000 fresh cases of syphilis,¹ and it is estimated that there are 643,000 cases of syphilis and 474,000 cases of gonorrhea constantly under medical care in the United States.² I would tell them that venereal disease is no respecter of social position, wealth or education; that the spirochaete is equally damaging to the diplomat and to the street cleaner. Venereal diseases are infectious and accordingly constitute a public health problem; and "the future of the public health campaign depends more than on any other one thing upon the development of a technic for ending the infectiousness of a patient within an hour after the first treatment, and keeping it ended, simply,

briefly, and painlessly."³ If we are to accomplish this we must take the public into our confidence, explain the dangers of venereal disease, publish the facilities for treatment, and secure their voluntary co-operation in eliminating the diseases.

In the past and even today many factors have conspired to prevent the education of the public concerning venereal diseases. Shame and disgust have been and are associated with the acquisition of these diseases in the minds of men and women, and the so-called respectable classes have deluded themselves with the assurance that venereal disease cannot touch them. These diseases are closely associated with sex and it is only since the beginning of the Great War that we have rid ourselves of prudery and sex has become a discussable subject. Perhaps the factor most harmful to a successful publicity has been the temptation to discuss venereal disease as the heavy penalty for deviation from the path of virtue, which it is not. The "seasoned" sinner is too clever to pick up a venereal infection. More often it is the inexperienced teen age girl and boy, the bride, or the innocent child. We must not confuse sin, a spiritual defection, and disease, a physical manifestation.

An effective publicity must reach the adolescent and the girl and boy in the late teens and early twenties. Statistics here and in England show the greatest incidence of primary venereal disease infection lies between 20 and 24 years, with the peak among the females a trifle earlier than among the males.⁴ Therefore, if we are to prevent disease we must reach the adolescent and the youth in the late teens and the early twenties *before they are infected*. And we must not forget that the youth of today lives in a highly colored, rapidly changing age. The pendulum has swung far from the gloom and excessive restraint of the Puritan to a period wherein major stress is placed upon self-fulfillment and sexual passion regardless of any solemn obligation to others that might be a deterrent to that goal. The literature, periodicals, theatre and cinema are loaded with skillfully worded appeals to the imagination and sentiment of the young people. Those of us who know the forlorn, diseased girl who has trespassed the moral code as we see her in office, clinic or hospital practice would never recognize her

made glamorous and desirable by our Garbos and Bankheads; and we can hardly expect the romantic, imaginative youth with fired emotions to exhibit discriminatory judgment. Our teaching of young people must be sympathetic of the times and tactful if we are to inspire the desire for prevention and cure.

I asked a young mother, intelligent, college trained and in the comfortable surroundings of a middle class family, what she would like to know about venereal diseases. Her answer was: "What they are; can they be cured; and how long does it take to cure them?" If we accept her challenge and answer her question, we shall have contributed to the education of the public.

Syphilis and gonorrhea are the important venereal diseases. There is so much that is of interest concerning syphilis it is difficult to select that which will be most practical. The disease is not easy to diagnose because of its multiple manifestations. We should make it plain that syphilis attacks all ages, from the fetus in utero to the senile with one foot in the grave; that it attacks all tissues from the highly specialized brain structure to the humble, sturdy bone; and, therefore, no physical examination at any age is complete without a *Wassermann-Kahn* test. And remember that one negative reaction does not rule out syphilis.

At no age is this test so important as in the pregnant woman. She should be taught to demand a blood test when she presents herself for the first examination and also when the pregnancy has progressed six months. The presence of syphilis in the pregnant woman demands intensive treatment.

Every adolescent girl and boy of ordinary intelligence should know that repeated abortions in a woman may, and usually are due to syphilis; that the high mortality at birth and within a few hours of birth may be attributable to syphilis; that the underweight, dull and muddy skinned *newborn* with a puny, wrinkled and creased face is a syphilitic child, and as such owes its condition to syphilis in one or both of its parents. We should teach that treatment of the syphilitic newborn usually is futile, and that, therefore, the *prevention of syphilis in the newborn* lies in its detection and treatment in the parent. With the almost universal use of the serological test many more cases of syphilis are being recognized early.

Early Congenital. Even though treatment has been intensive in the mother and the child looks all right at birth, the stigmata may appear in a few weeks, the bullous lesions on the palms and the soles, the condylomata at the anus and the snuffly rhinitis. Treatment is available for this child and should be intensive for 18 months with constant observation thereafter, because congenital syphilis may manifest itself anywhere between birth and thirty years of life, though most of the late congenital syphilitics will show symptoms between 10 and 18 years with the maximum at 12 years. Syphilis tends to heal itself with time because of the immunologic processes in the body, but we must bear in mind that if the child survives the early period of infancy he may be seriously handicapped by keratitis, perhaps the commonest complication and which occurs in 52% of cases, or impaired hearing in the adolescent years. There is always the possibility that he may be mentally deficient, or that which is more difficult to recognize may not quite measure up to our standards for adult life and as a consequence be one of the numerous problem people unable to adjust to the complexities of society.

So long as we in the clinics and private practice meet with innocent children, handicapped for life by physical and mental ravages of syphilis, so long are we challenged to educate the public. The only *real cure of congenital syphilis* lies in its prevention, and if not prevention, then early detection and treatment. Educate the boy and girl to know about syphilis long before they are fathers and mothers. Teach them to demand anti-nuptial health certificates based on a physical examination and a blood test. Make our laws universal so that this may be a law in every state and not only in some far-seeing states as at present. It has been suggested that we establish consultation centers for those contemplating matrimony. When two people are in love it is a trifle optimistic to believe that we can point out dangers ahead, but the center would focus attention on the necessity for examination, and might make a man or woman think twice before knowingly infecting his partner.

Examine every pregnant woman early in pregnancy. Make a Wassermann-Kahn test on both father and mother, and be painstaking enough to repeat it later in the pregnancy.

Treat the pregnant women who are syphilitic. Observe and treat, if necessary, every syphilitic child until he reaches puberty. And let us as teachers tell the public that a program less inclusive is hazardous.

There are many false notions prevalent today about syphilis. We must make known that the chancre is a painless, unobtrusive sore. That the extra-genital lesion is not at all uncommon. The chancre of the lip may be mistaken for a simple cold sore and the mucous patches in mouth and throat for canker sores; yet, these are the most highly infectious and menacing manifestations of syphilis. Rarely is the newly syphilitic ill nor is his skin littered with sores, as the average lay person expects. People as a whole are more likely to be frightened by the unsightly skin manifestations of psoriasis rather than by the roseola. The roseola that appears in secondary syphilis, especially in women, may be so faint as to almost escape detection even in excellent light and with the trained eye of the physician. On the female genitalia the chancre may be a minute, linear abrasion defying detection. Every moist lesion on the female genitalia should be considered a potential chancre or early secondary lesion until ruled out by microscope and serologic tests.⁵

We must teach the public to demand dark field examinations. All of us admit that the best hope for cure lies in early treatment before the spirochaete has fortified itself in the tissues, and too often in our zeal to cure we have been guilty of giving arsenicals before the blood test is positive and without a dark field examination. Good judgment demands an absolute diagnosis even though it threatens the effectiveness of the cure. Recently I saw a patient whose husband developed a genital lesion while he was on a vacation in a distant village in western Canada. The history was positive for recent exposure, the serologic test was negative, but the examining physician thought the lesion typical. Dark field examination was not available nearer than 150 miles and the patient was short of funds. The sincere doctor gave a course of arsenicals and advised observation of the wife, my patient. Now after six injections of neo-arsphenamine with a blood still negative this man has recovered from his remorse over his immoral act and his fear of the spirochaete and is convinced he never had syphilis. He re-

sents being "rushed into" treatment and no amount of persuasion on our part can convince him that he is a menace to his wife, to his healthy child and to future children that may be born of his marriage. We cannot criticize the doctor. He did what any one of us would have done in similar circumstances. The dark field is the "missing link" in the chain.

Hitherto it has been difficult to obtain dark field examinations because of the costly equipment, the time and skill required in collecting the chancre fluid, and last but not least the skill of the microscopist, for it does require skill and experience to detect the spirochaete even though you may have it corralled on the microscope. We are hopeful of improvement in our facilities in this trying problem. Riehl,⁶ in 1919, experimented with the viability and longevity of the *treponema pallida* and described a method of using a glass pipette in which to collect and preserve the chancre fluid. In 1930, Mahoney and Bryant⁷ collected chancre serum in glass capillary tubes, closed the ends of the tube by pressing it into a soft 50% paraffin-vaseline mixture for a distance of about 1 centimeter, and stored the tubes in a refrigerator at 4 degrees centigrade and at room temperature exposed to the light. As late as 96 hours they were able to find characteristic, distinctly motile *treponema*. The specimens stored in the ice chest kept best, naturally, but those kept at room temperature and exposed to the light rendered acceptable preparations for dark field examination. The method is worthy of the further study that is being given to it, and from this we are hopeful that physicians in remote places and that those in cities without facilities, and whose patients may be unable to pay, may be served with dark field examinations through the Public Health Departments as they now receive blood tests. Thus accurate diagnosis will be assured at a time when the chances for cure are best.

We know the opportunity for cure lies in early diagnosis and treatment. The possibility for cure is in exact mathematical relation to the time of instigation of treatment. It is not important that large quantities of *treponemoidal* remedies be introduced into the patient's body, but that the drug be given at an opportune time, i. e., when the spirochaetes are accessible. It is impossible to make an accurate

statement as to cure because with the ability of spirochaete to attack any and all tissues, all varieties and types of syphilis are possible and there must of necessity be varying criteria of cure. We can say to the public that early syphilis, from the time of appearance of the chancre to the first weeks of the roseola may be cured by intensive treatment. In later stages it is more honest to say that many of the symptoms can be cured, but the disease itself will remain latent in the tissues. Professor Warthin,⁸ after making necropsies on a number of patients who had latent syphilis, stated: "No case of perfectly healed syphilis has been discovered. Whether a consistent 5-year period of treatment would finally rid the body entirely of spirochaetes is still undecided. None of the cases had been under continuous treatment for that length of time, but many had received what is regarded by the clinician as thoroughly satisfactory treatment, with complete clinical cure."

We must, however, be guarded in our statements as to the curability of late syphilis. Any pessimistic statement on our part would be followed by a lack of interest in treatment, a "what's-the-use" attitude. We must teach the necessity for prolonged treatment and observation.

Gonorrhea: We find gonorrhea in the *New Born*. The eye provides a fertile soil for the propagation and growth of the gonococcus, and in the passage of the child through the birth canal the eye is exposed to any infective agent that may be present in the genitalia of the mother; hence, ophthalmia neonatorum. An irritative process is set up and very quickly followed by enormous swelling both of the lids and the mucosal lining of the eye, making impossible the closing of the eyes and even the edematous mucosal lining of the lids may bulge through the imperfectly closed palpebral slit. Profuse purulent secretion escapes. The pressure on the cornea is so great that ulceration follows, and unless intelligent and vigorous treatment is instituted immediately blindness or impaired vision results. Frequently with our best therapeutic efforts complete disorganization of the eye is our reward. The time is so short between the time of infection and the development of these serious, uncontrollable symptoms that no time may be lost in caring for this very hazardous complication. We have

an efficient *preventive* in the silver nitrate drops, and the incidence of blindness in children in the U. S. due to ophthalmia neonatorum has been reduced from 28.2% in 1907 to 7.5% in 1931.

One would think it quite unnecessary to discuss this treatment, yet, incredible as it may seem, a state as enlightened as our own Illinois has not hitherto had a law requiring the Credé treatment. Prejudiced people have objected on the basis of its enforcement being an infringement of their constitutional rights, and we have 15 times as much ophthalmia neonatorum as New York State and 11 times as much as Missouri, both states requiring the Credé treatment of the newborn. When a bill for Credé was presented to our State Legislature in 1915 the objections of the anti-medical group resulted in the law being amended to "require that cases of ophthalmia neonatorum must be reported," presumably so that if the serious complications I have enumerated did develop treatment could be given at once in an effort to prevent blindness. Yet, as I have said, the time is short between the time of infection and the appearance of very serious, and difficultly controlled symptoms. In the 1931 Session the Bill again was presented and failed of passage, but the recent 1933 Session of our Legislature gave the Bill approval and sent House Bill 161 to the Governor for his approval to the end that every child born in Illinois must have the Credé treatment not later than one hour after birth or the person responsible for its omission be subject to punishment. Thirty-five (35) states have mandatory laws or ordinances for this treatment of the newborn's eyes, and Illinois will bring the total to thirty-six (36) states. We must lose no opportunity in speaking to lay groups to encourage favorable publicity for this law. Explain why it is essential to give this treatment that does so much good in the way of prevention and certainly does no harm. Let every mother and father know of its importance and desire Credé for his and her child.

Then we see vaginitis and vulvo-vaginitis in the female infant and child. Rape is thought the most constant source, but more commonly the contaminated hands of a careless nurse-attendant, a soiled bedpan, linen, thermometer or toilet seat are the mode of transmission, and children who sleep in the same bed with an

adult infected with gonorrhea have been known to become infected. It is most frequent, of course, in institutions and camps where children are crowded together, but occasionally we see it in private practice where the observance of personal hygiene and adequate sleeping arrangements are factors in preventing the dissemination of this disease.

The vagina in the female infant and child is paved with a modified squamous epithelium on which the gonococcus finds a fertile soil. At puberty this epithelium becomes cornified and changes to the more resistant epithelium found in the adult. If the gonococcus is deposited upon the genitalia of the child it sets up a violent and obstinate condition, evidenced by a profuse and purulent discharge from the vagina and by a hyperemia and injection of the mucosa. The child complains of pruritis and burning on urination, as the profuse vaginal discharge makes its appearance. The skin of the surrounding areas becomes excoriated due to the irritation initiated by the discharge, and the inguinal glands may show hypertrophy or in rare cases suppuration. The diagnosis is based on the clinical findings and the positive smear, though the history in some instances may aid. Inasmuch as gonorrhea vulvo-vaginitis is a reportable disease and its presence prevents the child from attending kindergarten and school the diagnosis must be clear cut. We must not forget that infection with bacillus catarrhalis which is very difficult to distinguish in the smear from the gonococcus, the meningococcus, streptococcus, pneumococcus and the ubiquitous coli may cause similar symptoms; also, that while the gonococcus may be the original invader of the vaginal tissues and initiates the pathology, in no time there is an invasion of secondary organisms which continue the pathology. The child is entitled to an accurate diagnosis so that, if infected, her health may be preserved; her family, because of the expense and inconvenience entailed; her school-mates, on account of the danger of infection. In cases resistant to treatment we must make use of the culture and fixation test to rule out the infectiousness, so that the child may not be kept from school beyond the actual time she is a menace to others.

Treatment of vulvo-vaginitis in the child is necessarily slow. During the acute process there is much pain and tenderness; the child is

easily frightened; many of them are inadequately trained and hard to handle. These factors, plus the smallness of the parts rendering instrumentation difficult, combine to make treatment of the child a process that requires patience. Adequate and painless treatment may make it necessary to slit the hymen. Often at first the most we can attain is mere cleanliness of the parts until by tactful persuasion and gentle treatment we can win the co-operation of the child. We must warn parents and teachers that there is a tendency to chronicity in this disease; that response to treatment, however expert, is very slow and there is always a possibility that the latent infection will recur if the child is attacked by some acute infection associated with a high febrile reaction.

Aside from the physiological aspect of the condition there is the psychic problem. The very necessary treatment focuses the attention of the child on her body and especially on her genitalia in an unfortunate manner. The constant irritation of the discharge, rubbing secondary to the pruritis and the handling of the parts in the treatment easily may lead to the unfortunate habit of self-abuse. "Small children, whose attention has once been directed to their own genitals—usually by masturbation—are wont to progress in this direction without outside interference, and to develop a vivid interest in the genitals of their playmates." As the occasion for the gratification of such curiosity is generally afforded during the gratification of both excrementitious needs, such children become voyeurs and are zealous spectators at the voiding of urine and feces of others. After this tendency has been repressed, the curiosity to see the genitals of others (one's own or those of the other sex) remains as a tormenting desire which in some neurotic cases furnishes the strongest motive power for the formation of symptoms."⁹

Gonorrhea in the adult female is a curse. Our hope lies in the research of the future. At present our efforts to cure are at best futile attempts to stem its ravages. The numberless operations of varying degrees of mutilation in even young women are ample justification for a comprehensive program of teaching. The adolescent and youth in late teens and early twenties must be taught that gonorrhea is the most common cause of sterility and invalidism in

women. Gonorrhea is infectious only in the moist state; when dry it dies. Therefore, it is transmitted exclusively by contact and for this reason we know that gonorrhea in the adult female is in 99% of cases the direct result of sexual intercourse with an infected male. Teach the boy and young man that it is a crime to infect his partner.

The large area of tissue receptive to gonorrhea infection in the female genital tract makes possible a variety of clinical pictures, depending upon which part of the tract is chosen for the pathology. The folds of the introitus and especially those enveloping the urinary orifice afford a lodging place for the infected discharge. The mucosa of the urethral meatus is an extremely favorable medium for the growth of the gonococcus. The symptoms of the urethritis may be slight and as weeks or months may elapse before the development of the more serious symptoms in the adnexa the association between the two phases of the disease may be lost.¹⁰ The folds of the vulva, the glands of Bartholin, the deep Skene's, the ducts of the cervical glands, the ovaries and the mucous lined frills and fringes of the Fallopian tubes and the accessible pelvic peritoneum are fertile fields for the infection.

Gonorrhea is a disease of man, is not found in animals and the organism grows with difficulty in the laboratory except on media made with human secretions. There exists no immunity to it, either racial, individual or that conferred by previous attacks. Its most discouraging and treacherous aspect is its power to remain latent in the human tissues only to be stimulated to acute activity by changes in the circulation of the surrounding tissues as are brought about by menstruation, abortion, childbirth, pelvic surgery and sexual activity. The infection may be latent in a man and spring into activity upon being transferred to his partner where because of the physiological processes enumerated it finds conditions more favorable to its growth.

In a paper so short it is impossible to take up the necessity for 1. spinal puncture on all syphilis, the 2. tremendous mortality and morbidity from cardiovascular disease of syphilitic origin, the 3. highly disabling complications of both diseases which lessen the earning capacity of the individual and frequently make him a

public charge, the 4. number of general paretics admitted to our rapidly growing insane population, the 5. necessity for an annual physical examination in all treated patients, the 6. dangers of too little treatment, the 7. unfortunate reactions in some individuals sensitive to the drugs, and last 8. but not least the necessity for properly controlled advertising by the medical society and the Public Health Department to offset the commercial institutions which aim to treat venereal disease and make money at the same time.

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SOME OF THE OBSTETRICAL PROBLEMS OF THE COUNTRY DOCTOR*

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It is not within the province of this paper to enter into a full and scientific discussion of all the problems encountered by the physician doing obstetrics in the country home. My purpose is to review some of the literature pertaining to some of the more important problems, and to develop a working basis by which the country Doctor can formulate a definite policy for the solution of some of his more perplexing problems.

Prenatal care, important as it is, is a much neglected practice in the country. Yet, there is no field in preventive medicine where so much can be done to save human life and misery. The general practitioner imagines he knows his patients too well. He lacks that enthusiasm required to teach his patients the real importance of this work. Lack of interest on

the part of the physician causes neglect on the part of the patient. The physician must either sell preventive medicine to the patient or the patient will sell a hard luck story to the doctor. Twice in the last year I have been called by patients in labor at full term who had never consulted a physician. If obstetric practice in the country is raised to the high level to which it belongs, the pregnant woman must receive far better prenatal care. Prenatal care endeavors to prevent the complications of labor and to separate the normal case from the abnormal one, if possible, before labor begins.

The question, "should the patient go to the hospital?" should be considered from every angle and determined on the merits of facts bearing on that particular case. The dead beat patient with easy normal labor may go to the hospital because she thinks it is an institution built by the rich for the benefit of the poor, with no intention of paying either the hospital or the doctor. We do not advise all cases to go to the hospital, yet refuse to care for some unless they do go. The strictly aseptic care of the normal case in the home, may sometimes be difficult, but never impossible. Far too often the complicated obstetrical case is sent to the hospital and referred to the general surgeon who is interested almost entirely in surgery and knows little or nothing about good obstetrical technic. To him, cesarean section may be the easy way out, although not always best for the patient. It was with intense interest and much concern that we read Doctor DeLee's article in the Journal A. M. A. of January 6, 1933. In which, he said; that women are safer from infection in home, than in the general hospital.

The greatest achievement of prenatal care is in the prevention of eclampsia, yet eclampsia remains the most important problem in obstetrics. The treatment of this malady has always varied from the very radical early emptying of the uterus, to the very conservative medical management. In the last few years the trend of current literature is decidedly toward the conservative treatment. For the country doctor, the management of this condition as outlined by J. O. Arnold and Temple Fay in the 1932, August, number of Surgery, Gynecology and Obstetrics, is the most rational and adaptable, and gives promise of improved results. This treatment is based on the assumption that

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eclampsia is the result of improper water balance and edema of the brain. Sedatives are given to control the convulsions, and hypertonic glucose solution given intravenously attracts the tissue bound water to the blood stream. Saline purge withdraws the fluid from the blood stream, and cerebral dehydration is accomplished by spinal puncture when necessary.

The most troublesome complication encountered in obstetrical practice is the vertex occipito-posterior position. Doctor Morris W. Vaux has said that this abnormality and the involved mechanism is the most misunderstood and badly handled complication of labor. He frankly admits an occasional error in diagnosis of the condition in his clinic.

That it is an unsolved problem in country practice there is tragic evidence. The proper management of this complication often taxes the skill of the most expert obstetrician. It behooves the country doctor to have a definite policy in mind, a plan of treatment with which he is familiar, and a technic which he can execute with safety. In the aged primipera where the bag of waters ruptures early, cesarean section is indicated.

At least 90 to 95% of the cases of occipito-posterior position will either rotate anteriorly or deliver spontaneously with face to the pubis if given sufficient time. It is not good practice to allow the woman to labor more than one hour or two hours at the most in the second stage of labor, unless she is making definite progress. If the head is above the brim of the pelvis, podalic version and extraction should be done. If the head is in the pelvis, I prefer manual rotation by the method described by Danforth. Rotation with forceps works well in the hands of some operators.

Now there is one problem I wish to present. What can the County Medical Society do to improve the practice of obstetrics in the country? In order to present this problem a little better I am quoting extensively from a general discussion by Doctor Arthur H. Bill.

GENERAL DISCUSSION BY ARTHUR H. BILL CLEVELAND

"The vertex occipitoposterior position has always been the most troublesome complication encountered in obstetric practice. It is a complication which has been met with great indecision on the part of the practitioner and one in which the results both for mother

and baby have been in a considerable percentage of cases thoroughly unsatisfactory.

"Not only have the suffering of the patient and the general fatigue following labor been unnecessarily great but there has been associated with the deliveries a considerable amount of maternal morbidity and fetal mortality. That the problem is still unsettled in the minds of a large part of the profession there is ample evidence in the literature which from time to time suggests various new methods of conducting such cases. There seems to be the greatest confusion both as to the general policy of meeting this complication and the technic to be used when intervention is resorted to. As a rule descriptions of methods in text-books and medical journals are very unsatisfactory and confusing and it is no wonder that the physician who conducts labor finds himself so at a loss to know the best method to use, that he is content to adopt the policy of watchful waiting as perhaps the safest one in his own hands.

"We have not found the occipitoposterior position to be a complication as difficult to manage as seems to be the general experience. In fact we believe that we have been able to care for these cases in such a way as to make them seem fairly simple in the vast majority of instances. I am, therefore, concerned with the question of why, there is such general difficulty in managing the occipitoposterior position.

"In the first place the most confusing teaching already mentioned is a considerable factor; and the fact that there seems to be no definite policy. In a discussion of a given obstetrical procedure which has been presented at a medical meeting, one often hears the statement that the procedure may be a good one and permissible in the hands of a specialist, but that it would be wrong to advocate such a thing in general practice because the general practitioner would bungle it and the results would be disastrous. In other words, we admit the value of the procedure but would deny the patient the benefit of it because it could not be carried out by every practitioner of medicine. Instead of attempting to raise the standard of obstetrics and bring medical education up to the standard we are keeping the standards of an important specialty down to the level of inadequate training. Such a thing would of course, not be tolerated in any other branch of medicine.

"Whether a physician practicing obstetrics feels competent to perform an approved operation or not he should know the value of the operation and the appropriate time in the labor when it should be performed. If in his judgment the operation is beyond the realm of his experience it is usually possible for him to obtain help from someone who has devoted more time and thought to such cases and he should do so and thereby give his patient the benefit of such consultation. It is a wise physician who knows and admits his own limitations in the practice of obstetrics. In obstetrics more than in any other medical specialty it seems that consultation is sought as a last resort and often the consultant finds himself in the position of meeting a difficult situation which has developed either from too long waiting or from interference on the part of the attending physician and is not able to attain satis-

factory results whereas if he had been able to manage this case earlier he might have found a comparatively simple situation and accomplished an easy delivery. Too great delay in delivering a baby may complicate the delivery because of the fact that the uterus may become tonically contracted, so much so as to interfere with the procedure of choice or the delivery may be performed at a time when the failing fetal heart and passage of meconium show that the baby is in such a condition that it cannot survive the delivery; and postpartum hemorrhage may occur as a result of uterine fatigue.

"The second consideration is the failure to make a diagnosis. It is no doubt true that a very large number of vertex occipitoposterior positions are not diagnosed. The diagnosis is somewhat more difficult than the diagnosis of any anterior position. This difficulty is due chiefly to the fact that the head is somewhat extended in all such cases and therefore the posterior fontanelle upon which one depends to a large extent in determining the position of the head, lies so far back and so high that it is not reached by vaginal examination. If the physician would realize that there is this extension of the head in posterior positions and when on examination he feels only the anterior fontanelle would follow the sagittal suture as far posteriorly as possible, he would in most cases be able to palpate the posterior fontanelle and therefrom make his diagnosis. In many cases the physician attempts to perform a forceps delivery without making a diagnosis of position, and of course, applies the forceps blindly, and makes traction upon the head which is in an abnormal position; usually with little success. I believe that no physician has a right to make traction with forceps in any case unless he knows the position of the head and therefore is sure that he has applied the forceps correctly.

"Third: Failure is sometimes dependent upon the first stage of labor. In cases of posterior position the first stage of labor is usually prolonged, and if the patient is not given sufficient analgesia or anesthesia to relieve pain the physician is apt to yield to the appeal of the patient or her relatives to deliver the baby at a time when the cervix is still resistant. Attempts to deliver through an undilated and resistant cervix have undoubtedly resulted in the deaths of many babies. The solution to this lies in the administration of sufficient anesthesia to make the patient oblivious of what is going on. In this way it is usually possible to allow the labor to progress until there is full dilatation of the cervix.

"When the head which lies in a posterior position will not rotate and will not descend under the force of strong second stage pains, the administration of drugs to stimulate uterine contraction, such as a pituitary preparation or the application of an extremely tight abdominal belt seems to add insult to injury, and only makes dangerous pressure upon the head of the child which may be already in distress. It is not fair to the child to allow its head to be subjected to such unreasonable pressure when it is easily possible to correct the abnormality of position.

"When the diagnosis of a posterior position is made

and it is found that after a sufficient delay in the second stage of labor no progress is made, operative interference becomes necessary. Of the numerous operative procedures which are employed in these cases a few should be discussed briefly.

"The method of attempting to deliver the head in the posterior position must be condemned because the only reason why the head did not descend spontaneously was because of this same posterior position. Such attempts to deliver do not make the head follow the normal mechanism of labor and the force required to deliver the head while still in this position should be considered entirely unjustified. It is our rule never to make traction upon the head when in a posterior position but always to consider such a position as an abnormality to be corrected. The same reasoning would apply to the policy sometimes advocated of drawing the head down to a lower level of the pelvis and then rotating it with forceps. We must realize that the greatest amount of force would be necessary and therefore the greatest amount of damage would be done during the traction which would bring the head down to the pelvic floor. The abnormality of position should be corrected at the pelvic plane in which the head is found. The procedure of making traction and rotation of the head at the same time must be condemned on account of the possibility of damage to the birth canal caused by the twisting or spiral movement.

"Manual rotation of the head has apparently been successful in the hands of some obstetricians. The greatest objection to manual rotation lies in the fact that the fetal head must be considerably displaced to a higher pelvic level when it is grasped by the whole hand inserted in the vagina, and the fact that it is very apt to return to its posterior position before forceps may be applied unless the scalp is caught by a vulsellum forceps—an unsatisfactory procedure.

"At the Cleveland Maternity Hospital we have a very definite policy of handling the occipitoposterior position. There is no interference in the first stage of labor except in cases of emergency. By practically abolishing pain it is usually possible to allow normal progress until full dilatation is obtained. In the second stage of labor there is early interference. We do not feel that an occipitoposterior position is per se an indication for operative delivery. In a certain number of cases the head will rotate easily in the second stage of labor, but we believe that it is perfectly possible to tell in a given case whether the head will rotate promptly or, if at all, only after hours of hard labor. It should be possible to make this decision in at least one hour of second stage labor. The results of delay may be bad, for delivery methods are more easily carried out when early interference is resorted to, than after the uterus has become more tonically contracted or after the head has become impacted, in the pelvic cavity.

"If the head is above the pelvic brim or in the brim, podalic version is the procedure of choice. This practically eliminates the use of the high forceps, the only exception being an occasional case in which due to prolonged labor the uterus is so tonically contracted that it does not relax sufficiently under the anesthetic to

make a version seem a safe procedure. In these cases which should be very rare, the delivery is accomplished by forceps rotation in the same manner in which the head is in the pelvic cavity.

"In cases in which the head has passed the pelvic brim, forceps rotation is performed as follows: The solid blade forceps are used because the application is more easily made than with the fenestrated blades and is therefore usually more accurate, and rotation of the head is more easily accomplished due to the smoothness of the blades. The pelvic curve of the forceps instead of complicating the rotation as is sometimes thought, really facilitates it when the proper technique is carried out. We find no advantage in straight forceps such as the Kielland."

country doctor by way of the County Medical Society in the form of pediatric clinics.

If the family doctor is to be saved to the medical profession he must follow more closely the advancement made by the leaders of his profession and take a much more active part in the affairs of his County Medical Society. If the medical profession is to be saved from contract or state medicine it will be through more active cooperation with the County Society in carrying out a very definite program of instruction along both scientific and economic lines.

		Edinburgh Royal Maternity Douglas Miller			Private Cases W. C. Danforth			Cleveland Maternity S. M. Dodek			Cleveland Private Cases A. H. Bill		
		Deaths			Deaths			Deaths			Deaths		
		No.	M.	C.	No.	M.	C.	No.	M.	C.	No.	M.	C.
Head above or arrested at pelvic brim	Spon. rotation-spon. delivery.....	423		7	83			1		1			
	Spon. delivery-face to pubes.	88		8	5		1						
	Spon. rotation-forceps delivery.....	51		6	104			147		1			
	Manual rotation-spon. delivery.....	13/19		1/2									
	Manual rotation-forceps delivery.....	16		3	76			5					
	Podalic version-extraction.....	12	1	9	17			59	1	8	317		4
	Forceps rot. and del.-mod. scanzoni.....	15		1				1			34		1
Head below pelvic brim	Manual rotation-forceps delivery.....	59		6				7					
	Forceps rotation-forceps delivery.....	36	2	7				221	1	8	89		
	Transverse arrest-forceps one.....							54		3			
	Forceps delivery-face to pubes.	18		3				1		1			
	Craniotomy.....	2/8		2/8									
Cesarean Section	Complicated persistent O. P.....							12		1	11		
	Uncomplicated persistent O. P.....							6					
		747	3	63	285		1	514	2	23	500		10
				8.4%						4.4%			2%

In reviewing the literature on this subject I made a chart showing the termination of these cases. It shows the advantage of having a definite policy and plan of management, and that it makes but little difference which method is used, so long as the operator is master of the method.

There is a movement started to bring the advancements made in pediatries direct to the

In the manual rotation-spontaneous delivery there were 13 cases above the brim of the pelvis and 19 below. One child died in the cases above and two below. In the craniotomy cases two were above the brim of the pelvis and eight below.

DISCUSSION

Dr. Louis N. Tate, Galesburg: The obstetrical problem of the country doctor is a big subject. I think

Dr. Davis has handled this most admirably. One of the big problems is the element of time; the patient lives a long distance from the office. The patient on the farm feels that she cannot go into the office for prenatal care. That is a part of the element of time. If she would make more frequent visits to the office some serious difficulties might be prevented. Dr. Davis spoke of being called when he has not seen the patient until labor begins. He spoke of aseptic care in the home. It is hard to carry it out.

The prevention of eclampsia, the article by Arnold Fey in *Surgery, Gynecology and Obstetrics*, August, 1932, should be read by everyone as it is most valuable, showing the relation between the output and intake of fluids. The element of time also comes in when the doctor is on a case in the country, and is called to another place, or he feels he should be back at the office. He is out of reach of the telephone, and he feels that he ought to be elsewhere, so he sometimes does things too hastily. He may resort to high forceps which would do inestimable harm to the patient. The delivery of an eclamptic by dilatation and extraction, or induction of labor has produced a high mortality of 25 per cent. while in cesarean section the mortality may even be greater. We know the work of Stroganoff. From 1897 to 1924 in his clinic in a large series there was a mortality of 3.2 per cent. Conservative treatment is of great value in eclamptics.

Dr. Davis spoke of the great number of posterior occiputs. He also stated that a great number of rotations occur spontaneously. Personally, I think we should not delay too long in interference. Many times because of some element of time the doctor thinks he ought to do something and sometimes he does great harm.

My plea is that we should have more practical subjects in obstetrics in the county medical society meetings.

Dr. Andy Hall, Mt. Vernon: I was very much interested in Dr. Davis' paper. In 1931 as a result of diseases of pregnancy, childbirth and the puerperal state 639 deaths occurred in Illinois. It may be of some interest to give you the specific cause of these deaths as tabulated from the records of the Department of Public Health. They were as follows:

Abortion with septic conditions.....	83
Abortion without mention of septic conditions (to include hemorrhages)	21
Ectopic gestation with septic conditions specified.....	9
Ectopic gestation without mention of septic conditions.....	48
Other accidents of pregnancy (not to include hemorrhages) ..	10
Placenta previa	18
Other puerperal hemorrhages.....	41
Puerperal septicemia and pyemia.....	124
Puerperal albuminuria and eclampsia.....	128
Other toxemias of pregnancy.....	20
Puerperal phlegmasia alba dolens, embolus sudden death (not specified as septic).....	35
Cesarean operation	49
Other accidents of childbirth.....	49
Other and unspecified conditions of the puerperal state.....	4
Total.....	639

In looking over the deaths from cesarean operations I note that almost as many were reported from Chi-

cago as down state. Hence I presume that the operators down state are just about as skillful as those in Chicago.

Another interesting piece of information came to me some time ago in talking with the Director of Public Health from Pennsylvania. He said that in certain counties in his state where many mothers were attended by midwives, the maternal mortality was less than where they were attended by physicians. I requested him to send me his statistics on this subject and his rules governing the midwives, and he did.

No midwife is permitted to carry any drugs in her kit, except soap, antiseptics, nitrate of silver solution, laxatives and fluid extract of ergot. They are not permitted to give any drug internally except laxatives, and the fluid extract of ergot can be given only after the uterus is emptied. They are not permitted to use forceps or other instrumental means of delivery. In every case where there is a complication they must call a physician. But in complicated cases where a physician has been called, regardless of the outcome the case is charged up against the midwife. According to the Pennsylvania statistics in 1931, in ten counties in that state, 3,669 women were attended by midwives. Of this number 171 were complicated cases. Only three deaths of mothers were reported in the entire list. No cesarean operation was reported.

If there is any lesson taught in these statistics, I am ready to believe that we would have less maternal mortality if we would permit more mothers to deliver their babies themselves, rather than for us to get in too big a hurry, forcibly dilate the cervix, give pituitrin, ergot, and hasten delivery by the use of forceps.

THE SOCIALIZATION OF MEDICINE

EDWARD F. GARRAGHAN, M.D., F.A.C.S.

CHICAGO

The history of medicine from the days of Aesculapius to the present is a record of brilliant deeds executed by heroic men, all actuated by the noblest of motives,—the healing of the sick and the prolongation of life. The self sacrificing and sympathetic type of physician was the inspiration of the artist, Luke Fildes, in his masterpiece "The Doctor," the original of which adorns the walls of the Tate Galleries in London.

There is no more beautiful or perfect description of the old time doctor, the family doctor of the early days, than Ian Mac Laren's truthful delineation in "The Doctor of the Old School." He was a leader of men. He was loved because of his simplicity, integrity and medical lore. His influence for good permeated every walk of life. With the changing world, however,

new styles, different manners and a new type of medical man has arisen, one whose views and ideas are consonant with the times. As in the business world the tendency has been in the direction of concentration of wealth through corporations and trusts, so in medicine today we have a leaning toward combinations. Medical men in a certain community form groups endeavoring to include in their personnel experts in the various specialties and laboratory technicians. The practice is carried on according to strict business principles. The success of the small group practice of medicine has led to the formation of larger groups financially backed by large endowments, either as an integral part of one of the larger universities or the pet scheme of some great foundation. The family doctor who is trying to eke out a livelihood in the neighborhood of one of these pay clinics finds the going extremely difficult. His fees cannot stand the sharp competition of clinical charges and his equipment suffers when compared to the elaborate fittings of the costly clinic.

We have the sorry spectacle in this city of one of our large endowed Universities opening up a complete and attractive pay clinic. It is in keen competition with many of its old medical graduates who little suspected when they graduated from their Alma Mater that in the years to come she would be their keenest competitor. Lay organizations, fully aware of the large returns to be obtained from medical practice especially through the medium of extensive advertising in the daily papers, have formed groups among the young and inexperienced physicians and have carried on a big business unmindful of the ethics of organized medicine.

One large clinic or Institute in this city was and still is sponsored by some of the leading business men who allowed their names to be used for advertising purposes even though they were fully informed that such an organization was without the pale and had no standing in the organized medical profession.

Much can be said in favor of group practice when ethical physicians combine to divide the cost of equipment and upkeep and give to the patient at lowered cost a complete diagnosis and the best of treatment. Another cloud that has been hovering over the physicians for the past few years is the threat of State Medicine

or as it is sometimes termed, Socialization of Medicine. We look with horror at the prospect of State Medicine becoming established because we are reminded of the failure of State Medicine where it has been in vogue in foreign countries and where it has resulted in detriment to the physician and loss to the patient. What is State Medicine? During the meeting of the American Medical Association at St. Louis in 1922, the following definition of "State Medicine" was accepted: "State Medicine" is hereby defined to be any form of medical treatment provided, conducted, controlled or subsidized by the federal or any state government or municipality, excepting such service as is provided by the Army, Navy or Public Health Service, and that which is necessary for the treatment of mental diseases, the treatment of the indigent sick and such other service as may be approved by and administered under the direction of or by a local county medical society and is not disapproved of by the State Medical Society of which it is a component part."

What will State Medicine accomplish for the doctor and what benefit will it be to the public? To answer these questions satisfactorily, let us glance at the results of State Medicine as it has been in operation in certain foreign countries.

The panel system in England, a form of state medicine which was introduced into Parliament by Lloyd George about fifteen years ago, will give us a fair idea of the effect of state medicine upon the medical profession and upon the public. The doctor who receives a fixed salary from the state, small though it may be, is like the politician or the state institute employee. His diagnosis and treatment become a matter of routine and that deep personal interest which the private physician always has in his patient disappears in his anxiety to complete the allotted work of the day. State Medicine has lowered the standard of medicine in England. The system assures the English working man a bottle of medicine whenever he may need or desire it, but it does not give him a thorough examination and individualized treatment by physicians who have a special interest in his case. It seems that the English patient must have his bottle of medicine. The late Sir Frederick Treves, a famous surgeon once said, "The craving for bottles of medicine in this country (England) is second only to the craving for

drink." Those who have been in England can appreciate the appropriateness of this comparison. As a result of the panel system the public has not been benefited because they have received an inferior grade of medical attention. Surely the physician has not been benefited because, although he has received a fixed salary which is hardly commensurate with his needs, he feels that he is just a state employee, and that his freedom to do all that he possibly can for his patient is hampered. There is a socialistic trend throughout most of the European countries and, as a consequence, medical practice is under state or government control. In France the government has been under socialistic influence for many years and the medical profession has been obliged to defend itself against unjust laws that are so easy to incorporate and so hard to eradicate. In France it is left to the "Syndicats Medicales" to protect the doctors' interests in any controversies over medical service to the insured. The insurance law is applied compulsorily to all employees of both sexes less than sixty years of age who earn not more than \$600 per annum. The law in France is a little more liberal than in other countries for although all legally qualified practitioners of medicine may enroll for insurance practice, no physician is compelled to accept such service. We have no better example of state controlled medical practice than that which exists in Germany today and which has been in operation since 1883 when it was introduced into that country by Bismarck. Germany and Austria have always shown a strong leaning toward socialism and socialistic tendency. It is not surprising since almost every industry and most educational activities in Germany are under government control, that medical science in its teaching and practice would be dominated by that influence.

The effect of this socialistic influence upon the public health and especially upon the medical profession is worthy of consideration. In Germany and other European countries where lay domination and political control prevail there has been a steady decline in medical service. Among the workers there has been an increase in the loss of time from sickness and there is a greater amount of sickness than there is among the workers in America. In Germany the average number of days of sickness per

insured workman was 5.9 days per year in 1885, while in 1913 it had increased to 9.19. In Austria the increase from 1890 to 1913 was from 8 to 9.45 days.

In the United States where medicine is comparatively free from lay domination and control, the average loss from sickness for the American workman is 6.5 days. Statistics also show that the mortality rate is higher in those countries where medical service is under lay control.

After reviewing the effects of socialized medicine in foreign countries upon medical service to the public and upon the morale and standard of the medical profession, I feel safe in predicting that compulsory insurance or state medicine would not be beneficial either to the American public or the medical profession. The American people are liberty-loving and independent and anything that savors of force or compulsion, like the noble experiment of prohibition, stirs up a wave of resentment. The American physician likes freedom of action. He should not be hampered by lay inspired laws from pursuing scientific experiments intended for the public good. Public health service and all medical direction should be in the hands of medical men. The American Medical Association, the state and local county societies are amply supplied with intelligence to properly care for the health of the community. The less there is of lay or political influence in matters of health and the sooner the physician is restored to his rightful position of honor and respect, the better will be the health and happiness of all concerned.

In conclusion, my feeling on this question is best expressed in the words of "Hogarth." "I do not think you will make the doctor a better medical man by making him more of a civil servant and less of a doctor; for there is something inherent in officialdom which freezes the genial current of the soul, and thaw it as you will by whatever new principles of kindness and mercy it can never be thawed right out."

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Josh Harper says—"Hard times agree with some people. I feel twenty years younger, financially."

Society Proceedings

MADISON COUNTY

The Madison County Medical Society were guests of Dr. J. C. Stewart, Managing Officer of the Alton State Hospital, August 4, 1933. Dr. W. W. Eichelberger, Assistant Managing Officer, read a paper entitled "Psychiatry and the General Practitioner."

Dr. W. W. Brown, Collinsville, who took over the practice of the late Dr. G. H. R. Schroepfel, was elected to membership.

The September meeting of the Society will be held at Highland at which time Doctors Ralph Kinsella and William Coghlan of St. Louis University School of Medicine will present the subject of "Goiter."

Dr. John S. Patterson has moved from Bethalto to Staunton, Macoupin County.

The Madison County Medical Society, through its Tuberculosis Association, has just put on a campaign which resulted in the electorate voting to continue the operation of the Madison County Tuberculosis Sanitarium for another five years.

D. D. Monroe, M. D.,
Superintendent.

Marriages

Arthur Norden Bolz, Walnut, Ill., to Miss Marjorie Claire Muesse of Erie, June 18.

Gordon Maxwell Perisho, to Miss Mirriam Ann Holderman, both of Morris, Ill., August 12.

Knut Reuterskiold, Chicago to Dr. Virginia Jackola of Polo, Ill., June 17.

Manuel Spiegel, Chicago, to Miss Janice Gotlieb of Kenosha, Wis., June 17.

Personals

Speakers at the one-day course in pediatrics held in Monmouth, July 28, for physicians of Warren County and guests from eastern Iowa and western Illinois, under the auspices of the American Academy of Pediatrics, were:

Dr. Heyworth N. Sanford, Chicago, Infant Feeding.

Dr. Bert I. Beverly, Chicago, Behavior Disturbances.

Dr. Charles K. Stulik, Chicago, General Treatment of Children.

Dr. Arthur H. Parmelee, Oak Park, Care of the New-Born.

Dr. Woodruff L. Crawford, Rockford, Allergy.

Dr. Robert H. Graham, Aurora, Preventive Medicine.

Dr. Clifford G. Grulee, Chicago, secretary of the American Academy of Pediatrics, conducted a "question box."

The Chicago Medical Society recently sponsored the following series of health lectures in the Hall of Science at the Century of Progress Exposition:

July 31, Dr. Philip Lewin, Infantile Paralysis.

August 2, Dr. John A. Wolfer, Cancer of the Breast.

August 3, Dr. Gilbert Fitzpatrick, Cancer.

August 5, Dr. George B. Lake, Mental Hygiene.

August 7, Dr. Fremont A. Chandler, The Crippled Child.

August 9, Dr. Clifford J. Barborka, Diet in Health and Disease.

August 10, Dr. Francis E. Senear, Care of the Skin.

August 12, Dr. Max Cutler, Cancer.

The bulletin of the society reports that 1,068 physicians have registered at its booth in the Hall of Science during June and July.

During one recent week the Chicago Medical Society sponsored the following lectures at the Century of Progress:

Monday, August 14—Elmer Kenyon—"Disorders of Speech."

Wednesday, August 16—S. M. Feinberg—"Hay Fever."

Thursday, August 17—Charles F. Read—"Mental Health."

Saturday, August 19—Hart E. Fisher—Demonstration of "Evolution of Resuscitation."

The following were sponsored by Municipal Tuberculosis Sanitarium:

Tuesday, August 15—Clara Jacobson—"Our Children and Tuberculosis—Open Window Rooms, Sunlight Treatment, Etc."

Friday, August 18—Harry H. Freilich—"The Fountains of Infection—The Municipal Home and Its Purpose."

The State of Illinois Industrial Commission announces the creation of a medical department, with Dr. Philip H. Kreuscher, Chicago, as director, and Drs. Edward H. Rategan and

Daniel E. Meany as examiners. The following list of consultants has also been announced:

General Surgery: Dr. Karl A. Meyer, Dr. John A. Wolfer, Dr. John B. O'Donoghue, Dr. Raymond W. McNealy.

Fractures and Traumatic Surgery: Dr. Paul B. Magnuson, Dr. Kellogg Speed, Dr. James J. Callahan.

Psychiatry and Neurology: Dr. Francis J. Gerty, Dr. Ralph C. Hamill, Dr. George W. Hall, Dr. Lewis J. Pollock.

General Medicine: Dr. Frederick Tice, Dr. Walter W. Hamburger, Dr. Charles A. Elliott, Dr. James H. Hutton.

Roentgen Ray: Dr. James T. Case, Dr. Maximilian J. Hubeny, Dr. Hollis E. Potter.

Eye Surgery: Dr. Harry S. Gradle, Dr. Austin A. Hayden, Dr. Leroy Thompson, Dr. Sidney Walker, Jr.

Dr. Eben J. Carey, director of medical exhibits at A Century of Progress, was appointed yesterday to be dean of the medical school of Marquette university, Milwaukee. He has been professor and head of the department of anatomy there since 1920.

Dr. Carey succeeds Dr. Bernard F. McGrath, who has been compelled to resign because of illness. Announcement of the change was made by the Rev. William M. Magee, S. J., president of Marquette, and the Rev. A. F. Behrens, S. J., regent of medicine.

The new Marquette medical dean is a Chicagoan. He was educated at the University of California, Creighton university, Omaha, and Rush Medical college, Chicago. He was the discoverer in Europe of the "transparent man," and brought his display to the World's Fair as part of the Mayo Brothers' clinic.

Dr. Peter C. Kronfeld, associate professor of ophthalmology, Division of Biological Sciences, University of Chicago, has resigned to accept a position as head of the department of ophthalmology at Peping Union Medical College, Peiping, China. Dr. Kronfeld was graduated from the University of Vienna Faculty of Medicine in 1923 and served for a time as assistant in the eye clinic there under Prof. Josef Muller. He came to the University of Chicago in 1928 as assistant professor of ophthalmology. He will leave about September 1 for Peiping, going by way of Vienna.

News Notes

—The Sangamon County Medical Society and the state department of health made free tuberculin tests and roentgen examinations on a number of children at the Illinois State Fair in Springfield, August 19-26. According to the state department of health, this project was undertaken as a demonstration of the use and value of the Mantoux skin test and the x-rays in the early diagnosis of tuberculosis. Children between 5 and 16 years old, whose parents or guardian requested it, were accepted for the test and examination.

—Three youths 17, 18 and 20 years old were sentenced to 100 years each in the penitentiary after a trial in the criminal court of Chicago, August 14, at which they pleaded guilty of the murder of Dr. Bernard F. Garnitz last February. Dr. Garnitz was called from his home on the pretense of an emergency case. He drove to the address given, an empty apartment, and was met by the armed youths, who held him up and shot him in the side. He died, March 11. The length of the sentence for this crime sets a record in the criminal court. Judge Epstein in passing sentence, said: "The testimony in this case shows these defendants to be persons of malignant heart. To impose any sentence other than one which would make it impossible for them to ever become a menace to society would be unthinkable." The Chicago Medical Society kept a close watch on this case, which has been in the courts for seven months. About seventy-five members of the society, including the president, Dr. Austin A. Hayden, the president-elect, Dr. Charles H. Phifer, the secretary, Dr. Thomas P. Foley, and Dr. Julius H. Hess of the board of trustees, were present at the trial. For some months previous to this murder several physicians had been robbed after being lured from home on fake calls and in several cases had been fired upon when they did not respond quickly enough to the demands of the gang.

—The International Assembly of the Inter-State Postgraduate Medical Association of North America will be held in the Public Aud-

itorium, Cleveland, Ohio, October 16-20, 1933. Many distinguished teachers and clinicians will appear on the program. A major list of the names of the contributors to the program, with other information, appears on page 221 of this Journal. All members of Illinois State Medical Society are cordially invited to attend. Registration fee of \$5.00 admits all members of the profession in good standing.

—A report has been received that a man named Joseph Diamond has been seeking money fraudulently for a so-called credit and collection agency. This person has been obtaining money on orders for physicians' bags, instruments and other equipment from Chicago physicians, internes and students without delivering the goods. He is said to have been recently discharged from the Sharp and Smith Surgical Supply Company for dishonesty and is said to have an extensive criminal record. He is described as being about 5 feet 10 inches tall, slender, with black hair, dark skin, prominent brown eyes and a prominent nose.

—Dr. H. H. Lamb of Davenport was elected president of the Illinois-Iowa Central District Medical association at the annual meeting of the organization held recently at the Davenport Outing club. Dr. Lamb succeeds Dr. H. A. Beam of Moline.

Other officers named were:

Vice president—Dr. Karl Wahlberg, Moline.

Secretary—Dr. John Marker, Davenport.

Treasurer—Dr. J. H. Fowler, East Moline.

A dinner and reception honoring Dr. Walter Biering of Des Moines a native of Davenport who was recently elected president of the American Medical association, was held at the Outing club last night.

Dr. G. F. Harkness, of Davenport, president of the Iowa Medical association, acted as toastmaster. In addition to the quad-city doctors, physicians were present from Kewanee, Muscatine, Clinton, Geneseo and Cedar Rapids.

Among the speakers were Dr. Vilray Blair of St. Louis, Dr. J. H. Mitchell, Dr. Bulah Kushman and Dr. Edward Davis, all of Chicago.

Deaths

J. ROWE BEMISDERFER, Steger, Ill.; College of Physicians and Surgeons, Baltimore, 1883; aged 76; died July 27, of coronary thrombosis.

JOHN F. BLANKENSHIP, Havana, Ill.; College of Physicians and Surgeons, Keokuk, Iowa, 1890; aged 75; died July 19, in Forest City, of chronic myocarditis.

CHARLES E. BOYNTON, Chicago; Hahnemann Medical College and Hospital, Chicago, 1891; member of the Illinois State Medical Society; aged 73; died, July 20, of injuries received when struck by an automobile.

LEON GEORGE BRACKETT, Waukegan, Ill.; Chicago College of Medicine and Surgery, 1917; member of the Illinois State Medical Society; served during the World War; on the staff of the Lake County General Hospital; aged 47; died, July 19, in the Barnes Hospital, St. Louis, of cancer of the mediastinum.

TELESPHORE E. CARON, Kankakee, Ill.; Laval University, Faculty of Medicine, Montreal, 1891; a Fellow A. M. A. and practitioner in Kankakee for 38 years; aged 68; died, August 17, of carcinoma.

AUGUSTINE BEN CHILDS, Keithsburg, Ill.; Rush Medical College, Chicago, 1908; served during the World War; aged 52; died, May 28, in Evanston, of hypertension.

WILLIAM F. DICKSON, Chicago; Medical Faculty of Trinity University, Toronto, 1882; a Fellow, A. M. A. a practitioner for 50 years and former president of Illinois St. Andrew's Society; aged 75; died, August 26, of chronic myocarditis.

JOHN MILTON DODSON, Chicago; Rush Medical, 1882; Jefferson Medical College, 1883; retired, aged 74; died at his home, August 15, of uremia. Dr. Dodson became demonstrator of anatomy in Rush in 1889; professor of physiology in 1891; professor of diseases of children in 1898; dean of Rush and dean of medical students in the University of Chicago, 1898-1923; executive secretary of the Bureau of Health and Public Instruction of the American Medical Association, and on editorial staff of *Hygeia*, 1923.

At one time president of Chicago Pediatric Society and Chicago Pathological Society and trustee of Chicago Medical Society. During the World War he was medi-

cal advisor to the governor of Illinois and Major in Army Medical Corps. He was a member of the American Association of Anatomists and the American Association for the Advancement of Science.

Dr. Dodson had a very wide acquaintance among professional people throughout the country and was highly esteemed for his fine social qualities as well as for his precise scientific attainments.

WILLIAM JOSEPH EGAN, Chicago; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1905; a Fellow, A. M. A.; on the staff of St. Bernard's Hospital; aged 58, died, July 7, of cerebral hemorrhage.

JOHN MICHAEL FITZPATRICK, Chicago; Loyola University School of Medicine, Chicago, 1919; aged 49; died, June 28, in a hospital at Detroit, of generalized peritonitis.

JAMES LEE FUNKHOUSER, Danville, Ill.; Medical College of Indiana, Indianapolis, 1905; a Fellow, A. M. A. and urologist; consultant at the veterans home hospital and on staff of St. Elizabeth and Lake View hospitals; aged 50; died, August 11, from an accidental gunshot wound, self inflicted.

RAPHAEL B. GREEN, Chicago; Chicago Medical School, 1918; a Fellow, A. M. A., aged 50; died, July 26, at West Side hospital, of coronary thrombosis shortly after operating on a patient.

OSCAR JARRELL HAGEBUSH, Ashley, Ill.; Washington University School of Medicine, St. Louis, 1901; a Fellow A. M. A. and former managing officer of Anna state hospital; aged 55; died, August 6.

LESLIE BURRITT JOSLYN, Maywood, Ill.; Northwestern University Medical School Chicago, 1910; a Fellow, A. M. A.; senior surgeon in Westlake hospital, Melrose Park; aged 47; died, August 18, following a crash at Elmhurst airport. Dr. Joslyn had recently been licensed as a private pilot and was returning from a trip to Marengo when the accident occurred.

MYRON A. MARTIN, Chicago; Chicago Physio-Medical College, 1898; aged 64; died, July 12, of carbon monoxide poisoning, self-administered.

GEORGE HENRY MOORE, Aledo, Ill.; St. Louis University School of Medicine, 1904; a Fellow, A. M. A., and president of Mercer County Medical Society; aged

62; died, July 26, in Mercy hospital, Davenport, Iowa, from cerebral hemorrhage.

AEBINA M. P. NORRIS, Riverside, Ill.; Hering Medical College, 1895; aged 56; died, July 22, in Martha Washington hospital, of chronic myocarditis.

ARTHUR BENNETT RANKIN, Chicago; University of Toronto Faculty of Medicine, Toronto, Ont., Canada, 1906; formerly instructor of orthopedic surgery, Northwestern University Medical School, professor and head of the department of anatomy, and associate professor of surgery, Loyola University School of Medicine; served with the Canadian Army during the World War; on the staffs of the Woodlawn, St. Bernard's, Illinois Central and Washington Park Community hospitals; attending surgeon to the Cook County Hospital, 1916-1918; aged 50; died, July 24, of coronary thrombosis.

ALLEN SALTER, Lena, Ill.; University of Illinois College of Medicine, 1893; a Fellow, A. M. A.; aged 69; died, in Freeport, April 22.

EDWARD JACOB STONE, Chicago; Rush Medical College, 1921; a Fellow, A. M. A.; aged 38; died, August 7, of chronic myocarditis.

HENRY CLYDE TELFORD, Ottawa, Ill.; University of Michigan, Homeopathic Medical School, 1905; aged 61; died, June 22, following an operation at Ryburn-King Memorial hospital.

JOHN A. TRAIN, Chicago; University of Illinois College of Medicine, 1891; a Fellow, A. M. A.; aged 64; died, August 1, of cerebral hemorrhage.

WELLER VAN HOOK, Chicago; University of Illinois College of Medicine, 1885; a Fellow, A. M. A.; former professor of surgery at Northwestern University, historian and author of works on philosophy; aged 71; died, June 30, of cerebral hemorrhage, at his farm near Coopersville, Mich.

CYRILLE VERMEREN, Chicago; National Medical University, Chicago, 1898; Belgian consul general; was awarded the Cross of Officer of the Order of Leopold; aged 69; died, July 23, of carcinoma of the descending colon.

WILLIAM JOHN WULSTEIN, Ashton, Ill.; Hahnemann College and Hospital, Chicago, 1903; aged 63; died in the Methodist hospital, Peoria, August 12.

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GROWTH OF CULTS LACK OF COMMON SENSE

It is not amiss to note that, during the period of greatest development of medical science, development not only in its content but also in its intent, there has been at the same time in this country the greatest development of favorable inclination toward weird hypotheses concerning the character of disease and methods of its treatment that the world has ever seen. That this is not due merely to the dissemination of new knowledge, to those strata of society which previously had never thought, and which are now incapable of logical thought, is amply demonstrated by the growth of cults with a clientele made up in large measure of those members of society who have been by tradition and training accustomed to thinking. The aberration of their mental processes is not due to moronic heredity but perhaps in large measure to lack of contacts with enough individuals with sound common sense.—Wilson, L. B.: *Minnesota Med.* 11:365 (June), 1928.



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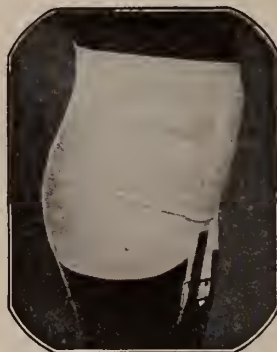
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Book Reviews

ESSENTIALS OF PRESCRIPTION WRITING: BY CARY EGLESTON, M.D., Assistant Professor of Clinical Medicine, Cornell University Medical College, New York City. Fifth Edition, Revised. 155 pages. Philadelphia and London: W. B. Saunders Company, 1933. Cloth, \$1.50 net.

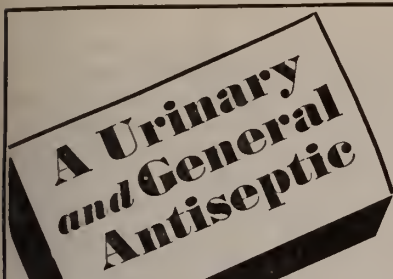
In this volume the author has provided the student of medicine with a succinct, yet sufficient, treatment of the subject of prescription writing. The work is designed to carry the student through the subject in a sequential manner, and to prepare him to construct a gramatic and proper prescription to fill any need.

HISTOPATHOLOGY OF THE PERIPHERAL AND CENTRAL NERVOUS SYSTEM. BY GFORGE B. HASSIN, M.D. Baltimore. William Wood & Company. 1933. Price \$6.00.

This volume represents the author's twenty years of work in the field of histopathology of the nervous system. Diseases of the peripheral nerves, spinal cord and drain are described individually, from a histopathologic angle only.

FRONTIERS OF MEDICINE. BY MORRIS FISHBEIN, M. D. The Williams and Wilkins Company in Co-operation with the Century of Progress Exposition. 1933. Price \$1.00.

(Continued on Page 28)



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Book Reviews

(Continued from Page 26)

PEDIATRICS BY HARRY WHITE CHAPIN, M.D. & LAWRENCE T. ROYSTER. Seventh edition. Revised and Rewritten. Baltimore. William Wood & Company. 1933. Price \$7.00.

The former edition of this work has been extensively revised in the present edition. Many sections have been rewritten, while much new material has been added.

MIGRAINE. DIAGNOSIS AND TREATMENT. BY RAY M. BALYEAT, M. D. With 26 illustrations, 5 of which are in color. Philadelphia, Montreal & London. J. P. Lippincott Company. 1933. Price \$3.00.

This work takes up most of the problems encountered in the diagnosis and treatment of Migraine Syndrome. The work covers the definition, historic considerations and heredity factor in migraine; incidents of migraine; etiology; symptomatology; pathology; laboratory data and prognosis; treatment of nonallergic and allergic migraine.

THE HISTORY AND EPIDEMIOLOGY OF SYPHILIS. BY WILLIAM ALLEN PUSEY. Springfield, Illinois. Charles C. Thomas. 1933. Price \$2.00 post paid.

This work is a complete and delightfully readable outline of the history and epidemiology of syphilis. Tracing its path from the beginning to the most significant new information the subject is treated broadly and with much literary charm. Events and persons appear in a broad and realistic manner, with a richness of approach and a dramatic conception of facts and figures far removed from the dull and dry accounts of most scientific and medical things. The biographies are intimate sketches, brief and the major point.

The chapter on epidemiology is a full statement of the facts, up-to-date bearing upon the personal and sanitary problems of syphilis. Such a complete statement of facts is not to be found anywhere else in one book.

THE SURGICAL CLINICS OF NORTH AMERICA. (Issued serially, one number every other month.) Volume 13, No. 4. (Mayo Clinic Number—August 1933) Octavo of 215 pages with 65 illustrations. Per clinic year, February 1933 to December 1933. Paper, \$12.00; Cloth, \$16.00 net. Philadelphia and London: W. B. Saunders Company, 1933.

The contributors to this number are Drs. Adson, Anderson, Balfour, Church, Counsellor, Cox, Craig, Dixon, Donald, Figi, Fulcher, Harper, Horton, Judd, Larson, Love, Lundy, Masson, Charles Mayo, Meyerdling, Mueller, New, Newell, Paterson, Phillips, Rankin, Thompson, Walters.

METHYLENE BLUE: SYNERGIST, NOT AN ANTIDOTE FOR CARBON MONOXIDE

HOWARD W. HAGGARD and LEON A. GREENBERG, New Haven, Conn. (*Journal A. M. A.*, June 24, 1933), state that there is no valid basis, theoretical, experimental or clinical, for the belief that methylene blue is an antidote for carbon monoxide asphyxia. The chief effect of methylene blue is to convert some of the hemoglobin of the blood into methemoglobin. By thus further diminishing the oxygen carrying capacity of the blood, methy-

lene blue acts as a synergist with carbon monoxide in promoting asphyxia. It probably exerts also other deleterious effects. The authors present experimental evidence showing that the administration of methylene blue in carbon monoxide asphyxia may induce fatalities that would not otherwise occur. Illness attributable to the effects of methylene blue persists after recovery from carbon monoxide asphyxia. These conclusions reinforce previous evidence that hypodermic and intravenous medication is more likely to be injurious than remedial in the treatment of carbon monoxide asphyxia.

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1. Don't come to the meetings.
2. If you do come, come late.
3. If the weather doesn't suit you, don't think of coming.
4. If you attend a meeting, find fault with the work of the officers and other members.
5. Never accept office, as it is easier to criticize than to do things.
6. Nevertheless, be put out if you are not appointed on the committee; but if you are do not attend committee meetings.
7. If asked by the president to give your opinion on some matter, tell him you have nothing to say. After the meeting tell everyone how things ought to be done.
8. Do nothing more than is absolutely necessary. When members roll up their sleeves and willingly and unselfishly use their ability to help matters along say that the society is run by a clique.
9. Hold back your dues as long as possible or don't pay at all.
10. Don't bother about getting new members. Let someone else do it.—Contributed.

APOMORPHINE AS AN ANTIDOTE TO STRYCHNINE POISONING

DAVID GOLD and HARRY GOLD, New York (*Journal A. M. A.*, May 20, 1933), carried out sixteen experiments on eleven dogs. They used strychnine sulphate and apomorphine hydrochloride in 1 per cent solutions. Both drugs were injected intraperitoneally. The doses in all cases were calculated in terms of milligrams of the drug per kilogram of body weight. The results of these experiments lend no support to the statement by Haggard and Greenberg that apomorphine controls strychnine convulsions in dogs and permits recovery from approximately twice the lethal dose of strychnine. The authors' results in a larger series of experiments show, on the contrary, that there is no appreciable antagonism between apomorphine and strychnine in dogs, that the reflex hyperexcitability from nonfatal doses of strychnine is not diminished and that death from doses fatal to untreated animals is not prevented by the administration of apomorphine. Considerable variation in the degree of hyperexcitability after similar doses of strychnine in different dogs, as well as differences in susceptibility of the same dog at different times are possible sources of error that may indicate an antagonism between the two drugs.



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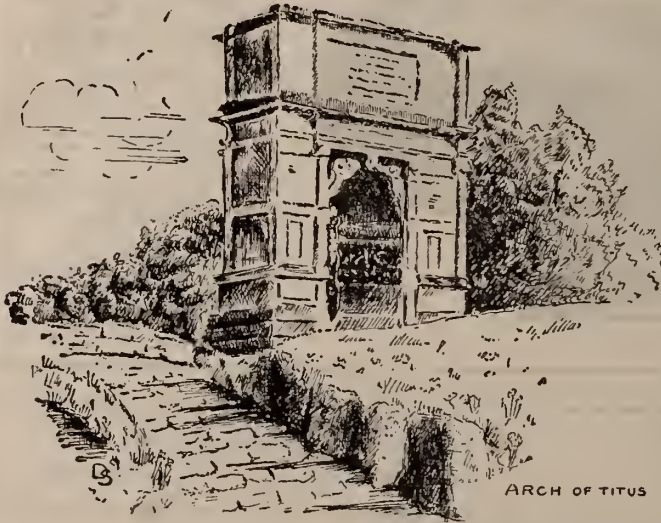
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(Continued from page 24)

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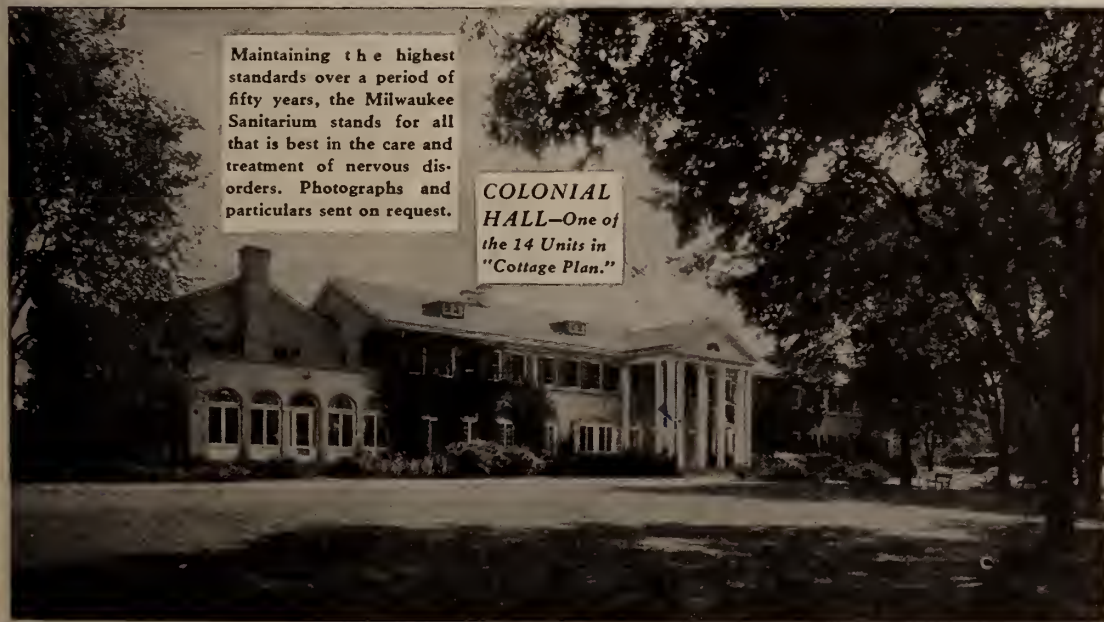
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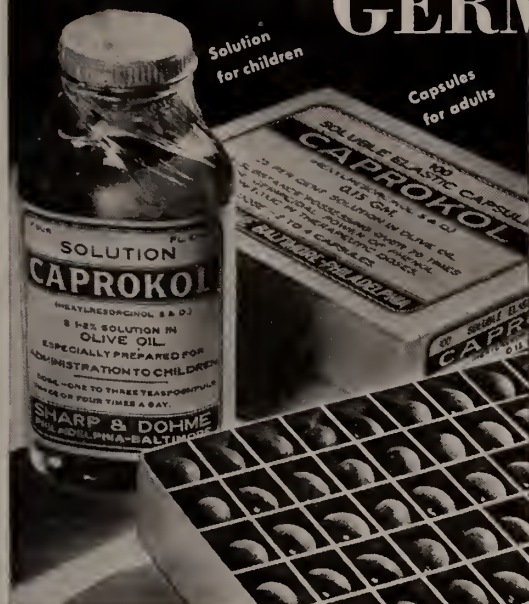
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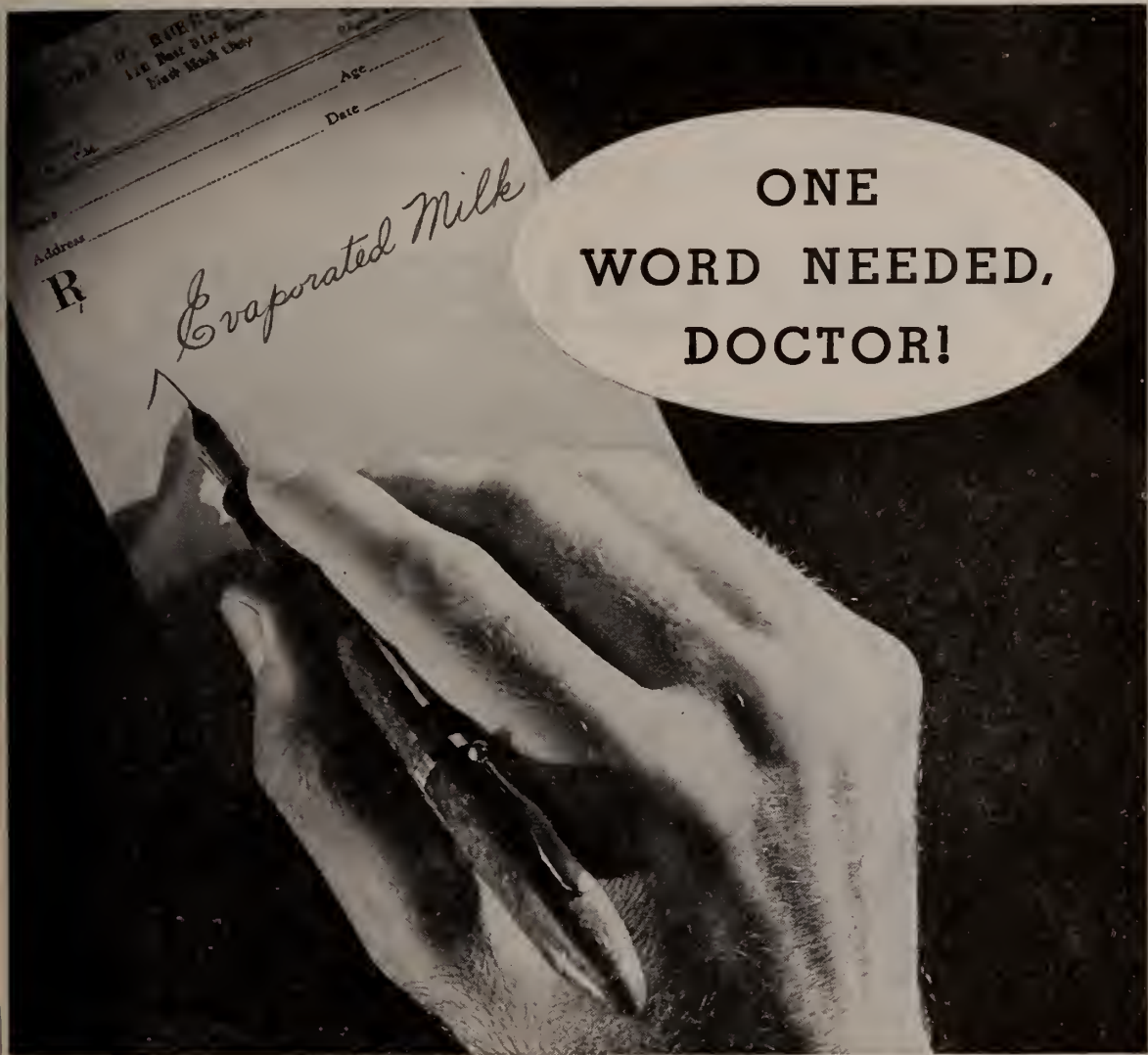
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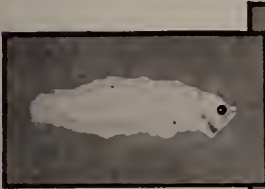
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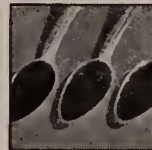


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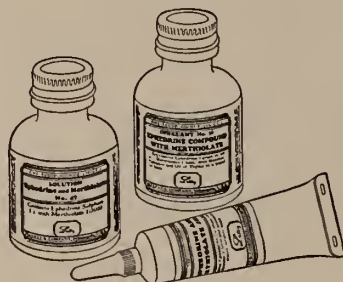
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Editorials

THERE IS TOO MUCH TENDENCY IN THIS COUNTRY TO BE SPOONFED. ALL THAT THE GOVERNMENT CAN DO WILL BE INFINITESIMAL COMPARED WITH WHAT BUSINESS CAN DO FOR ITSELF.

To do a thing "bigger and better than ever before" is the most salient ambition of the great American nation. This desire has carried us fast and far. So fast, and so far in fact that only too many of us—the bulk of the great American voter in fact—forget that the better part of ambition is discretion.

Such forgetfulness was not a liability of the early founders of the nation. That "the least government is the best government" was a fundamental dear to the colonist's heart. As to oppressing taxation—the fate of the Boston tea-party epitomizes all that in a single phrase.

The American nation's quest for the most and the best of everything has led us astray in the matter of government. We are now the most governed people on earth outside of soviet Russia but this does not per se make us the best governed nation. With a faith in our law-making bodies so sublime that it is almost ridiculous we have gone about perfecting ourselves and our neighbors by statute. Ever credulous in the matter of exploited cure-alls the past three decades have left the country and its citizenry in a perfect welter of statutes, harassing, conflicting, useless and perplexing. The average citizen has come to consider the slogan "There ought to be a law" as a personal and national panacea for every evil under the sun.

There has been an orgy of law-making. It has come to the pass where almost anything one man does for his own personal comfort or relaxation makes him directly or indirectly a law-breaker. The old "Blue Laws" were anathema. But at least they were limited in scope and in number. The new deluge of statutes could be called the "Red Laws". Their absurdity is enough to make the most purblind see red all over.

Even so debatable an authority as one section of the Wickersham Commission cites in its minority report from Com. Henry W. Anderson that

"They (the American people) have created the largest body of laws and the most complex system of government now in existence as restraints and controls upon individual and social conduct; but *every stage in their development has been characterized by a large and ever increasing degree of lawlessness and crime.* There is too much tendency in this country to be spoonfed. All that any government can do will be infinitesimal compared with what business can do for itself."

The unrestricted national pastime of making laws without end is producing odd by-products. To the Constitution of the United States the bulk of these by-products are practically unrelated.

Said George H. Moses, ex-Senator from New Hampshire and former pro tem president of the Senate, writing in the *Saturday Evening Post* of August 22, 1931:

"The Constitution of the United States is the organic statute upon which all our legislation is presumably based, and the background before which our Solons now perform is worth some study—especially since we are entering upon the bicentenary celebration of the birth of Washington, who presided over the convention which framed the Constitution. Whether we regard that instrument in the light of Gladstone's glowing superlatives, or whether it is looked upon, as so many are seeking to make it, as a mere collection of police regulations, it stands as one of the finest examples of that wise spirit of compromise through which all legislative action finally must be achieved. The two conflicting schools of opinion which developed in the convention met in the instrument which they submitted to the people. The victory for the moment rested with the Federalists—though their final triumph was delayed through a hard-fought conflict for ratification. And it is a source of satisfaction to those of us who have inherited the Hamiltonian tradition to remember that it was the liberty under the law which we there secured that produced the boundless era of expansion which still measurably continues in spite of the enlarged encroachments upon the rights of the states and

the continued assaults upon the civil rights of individuals, and the repercussion from economic conditions in distant nations, some of which did not exist in 1789.

"Interesting speculations readily arise as we view the Founding Fathers and seek to assess their relative influence upon our institutions. Great figures present themselves as we call their roll, but I hope I shall be held free from provincialism if I speak of one who, in the earlier and simpler days of the republic, when the Constitution was new and revered, laid an impress then fresh and deep, and even yet venerated by no inconsiderable body of opinion which if not noisy, is none the less still consequential. John Adams was the lawyer of the Revolution. It was he who formulated the legal basis upon which the colonists stood when they took up arms; and when their arms were triumphant it was he who translated these principles into the organic law for his own commonwealth and gave to Massachusetts a constitution which has since served as a model for eleven other states and from which the framers of the Federal Constitution itself did not disdain to draw freely. It was his aim to create for the new republic a "government of laws and not of men," and for a full generation our statutes—whether of the Congress or of the local legislatures—were few in number, simple in character, and framed within limitations which the allocation of our public powers had so strictly set. Indeed, we passed a full century of our independent existence and almost as long under our constitutional unity before any serious attempt was made either to change our fundamental statute or to multiply our legislation and alter its character. The original amendments to the Constitution run parallel to the Bill of Rights which prefaced John Adams' Massachusetts model, and it requires no straining of logic to declare that the amendments of the Civil War period, dealing as they did with citizenship, may be placed under like classification.

"Coincident with the rapid development of the West which followed the influx thither of so many youths who had gained the spirit of adventure and habit of command from their experiences in the Civil War, came the beginnings of a new school of legislation which centered its attention upon the economic prob-

lems which inflation, whether of activity or of credit, seems necessarily to entail. It may be futile now to discuss the economic origins out of which grew this new school of legislation, because, after a half a century of experience with it, it still remains undecided in many minds whether that country is governed best which is governed least and whether there is a clear line of demarcation between the functions which individuals should properly preserve for themselves and the functions which government—either local, state or Federal—should properly take on.

“For the minute, this question seems to have been determined in favor of the expansion of state and Federal authority. With this has come, if not the disappearance, at least the partial eclipse of our representative institutions; and I sometimes wonder if we have not ceased to be a republic, even though the matter of our becoming a democracy is still in an indeterminate period of experiment.

“It is natural enough that these developments should have brought with them a by-product of their legislative program which has had a marked effect upon the political mechanism under which our constitutional processes were designed to be carried forward. The two-party system is the only one under which the American Constitution can properly function, and it is not likely to disappear from among us. Yet today it seems to be existing in shadow rather than in substance, and our national legislature, designed to be distinctive from the parliamentary bodies of the Old World, has now witnessed the forceful beginnings of the Old World system of blocs, which seem to thrive here as well as in their parent soil beyond the sea.

“The bloc system, springing up full-fledged almost overnight, even as Minerva emerged from the brow of Jove, now constitutes the greatest menace which existing conditions present to the continuity of our constitutional processes.

“Early Congresses and the state legislatures enacted few and simple statutes; whereas, then self-respecting citizens in their communities scorned the aid of the Government in doing the things which citizens and communities took pride in doing for themselves, and which produced the great captains of enterprise who

have helped so prodigiously in making the nation great and rich and powerful—today we find the individual citizen, under the baleful influence of organized propaganda, turning to public authority for that which he should give to himself through self-help, and communities, in turn, reaching to the state capitol or to the Federal legislature to demand through added statutes the dubious benefits of thinly disguised communism. A part of this is due to the recognized indolence into which our people have fallen. Today no one wants to work, and even education has to be sugar-coated in order to render it palatable. In consequence, the land teems with short-cut artists, bodily and intellectually indolent, who seek the line of least resistance and who, through persistent patter, have brought about a large, a growing and, I am sometimes moved to think, a dominant school of opinion in which the sovereign panacea for any evil which may afflict us is to be found in an addition to the already swollen volume of statute law. At any rate, I have found nowhere any considerable group of average American citizens who, in any discussion of current events, and with the conversation turning upon some fancied hardship, will not develop at least one member rising up to exclaim with an emphasis, usually profane, that ‘there ought to be a law about it.’

“And so delicate is the interrelation of public opinion thus made vocal and those sensitive individuals who adorn our halls of legislation through the operation of the direct primary and the popular election of United States senators, that we have come to have laws *ad nauseam*. The delicate finger which so many legislators pride themselves in being able to lay upon the public pulse too frequently misreads for an organic difficulty that which is merely functional and febrile and fleeting.

“Those doctors who operate so blithely upon our body politic too frequently remind me of the product of those medical diploma mills which periodically produce scandals and upheavals in some of our states. They are not content with the reactions which they themselves affect to find, but they permit themselves too often to indulge in a widely receptive mood, which is preyed upon by the multiplying agencies of propaganda and publicity which our age has produced—and which in turn have

given birth to a new calling, the calling of the professional stimulator of public action—a calling which, I venture to assert, is in general rewarded far more liberally, if one may judge by externals, than any of the so-called learned professions.

“As a result of all this, we find ourselves confronted by a new relationship, established by the statutes—a relationship so far-reaching and comprehensive that it involves every item of personal enterprise or even of conduct. The Constitution itself now finds its fabric, once so clear and simple, threaded with provisions which scarcely can rank above the level of mere municipal ordinances; and the assault upon the statute books, both state and Federal, becomes yearly more impetuous, not to say impudent. The tiny stream of regulatory measures which began with the Granger legislation of a half century ago has now swollen to a raging torrent, and its volume, as measured at the close of the Seventieth Congress, meant the serious proposal within a two-year period of some 59,000 new laws, of which 20,000 were introduced in Congress and the balance presented to the state legislatures.

“The variety of these legislative proposals is an infinity which it would appear age cannot wither nor custom stale. They run the entire gamut of human activities. They trespassingly cut across the most private of human relationships, and whatever there is in the likeness of anything that is in heaven above or in earth beneath or in the waters under the earth is likely at any time to find itself the subject of legislative inquiry or the purpose of legislative enactment.”

THE CHORUS OF CAVIL AGAINST THE MEDICAL PROFESSION CONTINUES.

The lay publications simply will not let alone the medical men of this country and our maternity system. Time and again it is repeated that there is no adequate standardized unit of measurement and comparison on medical statistics of any sort, especially of maternity statistics that is accredited by experts. Yet the chorus of cavil continues. “Time,” under date of August 28, adds another howl against the American Medical profession by quoting from

another one of these “interesting” medical story-books published by an M. D. and this time by one who is both old enough and experienced enough to know better.

He admits that the book is “written for laymen and laywomen” according to “Time.” This really doesn’t seem to mitigate the offense very greatly.

There is really no excuse for the quoted statement, “It is generally agreed that the U. S. is the unsafest place in the world to have a baby. Some reasons: abortions; faulty technique of physician or nurse, resulting in puerperal infection; lack of sufficient good maternity hospitals; insufficient obstetrical training for the general physician; inadequate prenatal care; prevalence of attempts to shorten labor by use of pituitrin to quicken uterine contractions, application of forceps, turning of the baby, forced dilation of the cervix, caesarean operations.”

Quoting “Time” again the author of this book, Dr. Palmer Findley, 65, is professor of obstetrics and gynecology at the University of Nebraska’s College of Medicine, councilor of the American College of Surgeons, onetime president of the American Association of Obstetricians, Gynecologists and Abdominal Surgeons. He weights his book with many a quaint or appalling notion once held about childbirth, admits that posterity may find present-day ideas equally ridiculous. For laywomen and men who want to round out and freshen up their knowledge now, he offers a sound, thoroughgoing outline of modern facts and opinions about birth.

DOCTORS IN AUSTRALIA USE AIRPLANES IN PRACTICE.

Medical service in Australia is furnished by airplanes. Australia has some 250,000 square miles of interior. This airplane service by the medical profession has been furnished for several years.

The British Medical Journal quotes Dr. W. D. Walker of Adelaide who has spent several years in the Australian interior. In a lecture at the London School of Hygiene and Tropical Medicine the Doctor described the origin and developments of the world’s first civil aerial medical service. We quote:

"The pioneer of medical services among these sparse and scattered populations—the Rev. John Flynn—dreamed of a chain of hospitals, and established thirteen of them.

"The advent of wireless and aviation, however, changed the whole situation, and in May, 1928, at Cloncurry, in Western Queensland, an airplane was commissioned to carry a doctor to remote places in response to wireless summons. Small and inexpensive wireless transmitters, with a sending radius of over 600 miles, their power derived from small, foot-pedaled generators, were next distributed among the more isolated homesteads.

"Recent improvements have enabled messages to be automatically translated into Morse and sent out upon the ether by simply tapping a keyboard similar to that of a typewriter. At the central station they are retranslated, medical advice or instructions are sent back by wireless telephone, or, if the doctor's visit is necessary, a reply is forwarded that the 'flying doctor' is on his way to a spot where a white sheet and the smoke of a small fire indicate the landing-ground. During the first year of the service Dr. St. Vincent Welch flew 20,000 miles to attend 255 patients, and held forty-two consultations in twenty-six different centers entirely without mishap.

"The area of the flying practise is equal to that of Germany, Austria, Switzerland, and Denmark combined. Contributions toward the service have come from employers and employed, from private donors, and from government subsidies. In addition to the pilot, the plane has accommodation for doctor, nurse, patient, and one relative, but it is hoped soon to be able to accommodate an anesthetist as well, and to carry a fully equipped surgical unit.

"Thus, with the help of modern invention, a mantle of safety, for whites and aborigines alike, has been spread over a territory equal to half Europe. Care has been taken not to encroach upon the province of doctors already in practise in less sparsely populated regions. The medical men in the flying service, of whom there have now been four, only see the patients of these doctors at the doctor's own request, and, in the event of accident or emergency, the patient is taken to the nearest outlying hospital and there left in the care of his own practitioner.

"The ultimate aim is to establish a national service having a number of fully equipped base hospitals throughout the sparsely settled regions. Another important aim is to provide opportunities for post-graduate study abroad for doctors at the completion of their term of service."

A CODE THAT WILL ELIMINATE EXPLOITATION OF THE PROFESSION

All manner of medical treatment falls within the problems of the medical profession.

All preventive features of public health work should be confined to public health authorities with closest co-operation between the two.

Medical charities should be confined to those unable to pay and to those receiving other forms of charity.

Medical charity has been abused and can be corrected.

The medical profession should not be exploited for the financial or political advancement of some people and the personal advancement of personal and selfish groups.

The care of the sick should be in the hands of those possessing scientific medical knowledge.

Discourage those having financial means from being treated in charity divisions of hospitals and clinics.

Eternal vigilance is the price of liberty and a stitch in time saves nine.

It was a little thing for the watchman to leave a lantern swinging in the Cathedral at Pisa: but in that steady, swaying motion the boy Galileo saw the pendulum, and conceived the idea of thus measuring time.

The honking of a goose aroused the sentinels and saved Rome from the Gauls; and the pain from a thistle warned the Scottish army of the approach of the Danes—little things, but vitally important.

Warning signals of impending danger are oftentimes disregarded, else history would tell us a different story.

Repeatedly and over a period of years we have attempted to show you the red lantern of destruction swaying over medical practice. Repeatedly we have called your attention to the many menaces enveloping medical practice.

Will you take heed of the danger signal?

TWO THIRDS OF THE AVAILABLE HOSPITAL BEDS IN NEW YORK STATE ARE OWNED BY THE STATE AND SUPPORTED BY TAXES.

A HALT MUST BE CALLED UPON THE EXTENT TO WHICH STATE INTERVENTION IN AFFAIRS MEDICAL IS INCREASING.

With all the howl and furor for and against state medicine, medicine as well as the general public finds itself in a synchronously coincident position with the man who could not "see the woods for the trees."

Getting the proper perspective upon current conditions it is well to recapitulate and to estimate to some extent just how severely the taxpayer is burdened already with the expense of medical care for the indigent and the indolent.

A close check-up of such an inventory will make even the most casual of citizens first "stop, look, and listen" and then rebel.

Try it in your own community. And if the results are appalling—and they will be—seek what comfort you can from the fact that in New York state, according to the New York state commissioner of public health, Dr. Thomas Parran, Jr., tax levies must so be made that there will be available at the expense of the taxpayer annually some \$20,000,000 for some 55,000 patients afflicted with mental diseases; as well as an investment of \$19,000,000 and an annual expenditure of \$3,553,000 for the upkeep of tuberculosis sanitariums, and school health services some \$2,537,184, to say nothing of the large amount of tax raised money spent for the care of the crippled, the control of venereal disease, general public health and health nursing, free dental care, free medical care in current emergencies, etc., etc.

In April, 1933, of the population of the state of New York fifteen per cent were on the relief rolls. Of the hospital beds available in the state of New York *two-thirds of these hospital beds are owned by the state and supported by taxes.*

There seems every reason to believe, every calculation to confirm this belief, that unless this trend for state interference in medicine is speedily checked it will soon be beyond all curb or restraint. Once medicine falls into communistic conditions, it is inevitable but that every profession and trade must soon follow

suit. That eminent ex-president of the New York Medical society, Dr. W. H. Ross, is loud in his urging that a halt shall be called upon the extent to which state intervention in affairs medical is increasing in New York. Government interference tends to pauperize and to demoralize both the profession and the people. Hundreds of times we have heard this said and while most of us know it is true what action are we taking to stop even the veriest leak in the dyke? Broadened state functions in any domain mean more bureaus, more employees, more appropriations, more taxes, more prestige, more bureaucratic power and in the end—the tragedy of downfall.

HOW TO KILL A MEDICAL SOCIETY

1. Don't come to the meetings. If you do come, come late.
2. If the weather doesn't suit you, don't think of coming.
3. If you do attend a meeting, find fault with the work of the officers and other members.
4. Never accept office, as it is easier to criticize than to do things. Nevertheless, get sore if you are not appointed to a committee; but if you are, do not attend the committee meetings.
5. If asked by the chairman to give your opinion regarding some important matter, tell him you have nothing to say.
6. After the meeting, tell everyone how things ought to be done.
7. Do nothing more than is absolutely necessary, but when other members roll up their sleeves and willingly and unselfishly use their ability to help matters along, howl that the organization is being run by a clique.
8. Hold back your dues as long as possible; or don't pay at all.
9. Don't bother about getting new members. Let George do it.

—*Illinois Medical Journal, February, 1922.*

THE MUG THAT CHEERS

He closed his eyes in ecstasy,
And spoke as he stooped to kiss:
"Tis many and many a draught I've had,
But not from a mug like this."

—*Ohio State Sun Dial.*

WHO CAN JOIN THIS CHORUS

The Surgeon's knife, I've lived to say—
Affords "one" consolation.
For now I can to everyone
Talk of my "Operation." —L. J. F.

Correspondence

ADEQUATE MEDICAL CARE IS A MATTER OF PRIVATE CONSCIENCE, SKILL AND CO-OPERATION: RATHER THAN ONE OF TAXATION

Silvis, Illinois, September 14, 1933

To the Editor:

The editorial applause for Dr. Ohls is a thing which I, for one, appreciate a lot. For some years past I have known that that man worked hard in the field of make-up and get-ready and that the members of our state society benefited without ever knowing, for the most part, that there was a "managing" editor. Applause is deserved and your usual thoughtfulness pleased me more than usual.

As for the balance of the September editorials carried by the esteemed JOURNAL: All I wish to know from the earnest Michigan committee is one thing. What constitutes "adequate medical care" and who shall judge? I have opinions of my own. I am convinced that so long as representative practitioners allow themselves to be hoodwinked by money-catching phrases, little should be expected of folks who are busy with other works. I think that I know that *adequate medical care* is a matter of private conscience, skill and co-operation; rather than one of taxation or money donation. Money cannot buy adequate medical care in this shop or in that shop: conscience, and co-operation (between patient and physician) can.

As for the lead editorial: I marvel every time you cheerfully start all over again. We know that United States statistics since the Children's Bureau got its first little appropriation "to investigate and report," have included deaths from tuberculosis of long standing and deaths from syphilis and deaths from criminal abortion, all included in the category of "maternal mortality" by our Federal Bureau of the Census. And we know that, in no other country, does this handicap maintain. I can grin and tell that to a committee on occasion and rather get stimulation from the commotion among pay-rollers on the sidelines, shocked at being forced to listen to such truths; but I'm hanged if I know how you can remember to tell it to doctors so patiently, time after time,

before each session of Congress. Yes, the subject will come up before the next Congress. More power to you.

WM. D. CHAPMAN, M. D.

LET US IRON OUT OUR FAULTS IN OUR OWN COUNCIL CHAMBERS

Ravenswood Hospital.

Chicago, Sept. 30, 1933.

To The Editor:

An unfavorable comparison of the doctors of this country with any other group is not a very nice message to broadcast to the public who are going to have to tolerate our inefficiency. And certainly an epistle to our prospective mothers, persuading them that their chances are better with midwives than with our physicians, is malicious. Particularly is this unfortunate when the author happens to be one of our own ranks, who occupies a place of high medical authority. I refer to the article entitled "The Costs of High Obstetrical Care," appearing in the September issue of *The American Mercury*.

I do not believe that the good old-fashioned method of obstetrics, practiced in the homes by midwives or even doctors, without all the unnecessary frills of laboratory work and routine periodic examinations, is better than our procedure, or anywhere nearly as good or as safe. I resent keenly the statement that the present day conduct of an obstetrical case by a modern physician of this country includes much which "represents the expansion of human desires and wants without any relationship whatever to the scientific necessities involved." The modern woman is not so much more highly organized than her grandmother and great-grandmother. But she certainly gets a better break in life when it comes to the ordeal of child-bearing.

When there is fault to find with our efforts and there undoubtedly is at times, let us iron them out in our own council chambers and through the columns of our own publications, and not proclaim them to the public who are ever eager to misunderstand and magnify our shortcomings. In these days of economic stress, the family physician particularly is fighting for existence. It is unfair to attack him to the laity.

All my medical life I have been an ardent admirer of the editor of our great A.M.A.

Journal. But I am indignant to see him appear before the lay public in any role other than as our champion.

L. E. DAY, M.D., Councilor,
3rd District, Illinois State Medical Society.

GOVERNING MEDICAL CARE PROVIDED IN THE HOME TO RECIPIENTS OF UNEMPLOYMENT RELIEF

Extracts from Rules and Regulations No. 7

1. Policy—A uniform policy with regard to the provision of medical, nursing, and dental care for indigent persons in their homes, shall be made the basis of an agreement between the relief administration and the organized medical, nursing, and dental professions, State and/or local. The essence of such a policy should be:

(a) An agreement by the relief administration to recognize within legal and economic limitations, the traditional family and family-physician relationship in the authorization of medical care for indigent persons in their homes; the traditional physician-nurse relationship in the authorization of bed-side nursing care; the traditional dentist-patient relationship in the authorization of emergency dental care; and

(b) An agreement by the physician, nurse (or nursing organization) and dentist to furnish the same type of service to an indigent person as would be rendered to a private patient, but that such authorized service shall be a minimum consistent with good professional judgment, and shall be charged for at an agreed rate which makes due allowance for the conservation of relief funds.

The common aim should be the provision of good medical service at a low cost—to the mutual benefit of indigent patient, physician, nurse, dentist and tax payer.

The policy adopted shall be to augment and render more adequate facilities already existing in the community for the provision of medical care by the medical, nursing, and dental professions to indigent persons. It shall imply continuance in the use of hospitals, clinics, and medical, dental and nursing services already established in the community and paid for, in whole or in part, from local and/or State funds in accordance with local statutes

or charter provisions. Federal Emergency Relief Funds shall not be used in lieu of local and/or State funds to pay for these established services.

The phrase "in their homes" shall be interpreted to include office service for ambulatory patients, with the understanding that such office service shall not supplant the services of clinics already provided in the community.

For the complete Rules and Regulations see the Journal of the American Medical Association, September 23, 1933, Page 1026.

THOMAS P. FOLEY, Secretary
Bulletin C. M. S.

THE MAJORITY REPORT OF THE COMMITTEE ON THE COSTS OF MEDICAL CARE IS THE COMPUL- SORY HEALTH INSURANCE BILL OF 1919—PLUS

Brooklyn, N. Y.

To The Editor: The majority report of the committee on the *Costs of Medical Care* is the Davenport-Donahue Compulsory Health Insurance Bill of 1919—plus. It would sovietize medicine; it would make the people cattleized, card-indexed, units; it would make the physicians and every other agency of healing, panelized, cogs in a huge political machine; it would make public and private health a pawn in the game of social control by the moneybund foundations.

This plan differs from the Compulsory Health Insurance of 1919 in one significant particular—instead of The American Association for Labor Legislation, backed by the Sage Foundation, as the propagandist-in-chief, aided and abetted by an ex-president of The American Medical Association; this plan has a group with the high sounding title of The American Committee on Medical Costs, as propagandist-in-chief, aided and abetted by an ex-president of The American Medical Association, who is also the Secretary of the Interior in the Cabinet of President Hoover, a Department, by-the-bye that has nothing in common with Medicine or Public Health save that there are two Hospitals on the grounds of the District of Columbia which are under the jurisdiction of the Land Office of the Department of the Interior as

landlord . . . then this Committee is backed by the Sage and seven other foundations plus two Uplift and Welfare groups to lend the power of more money to the propaganda purchase of Newspaper space and Radio time.

I have not the slightest doubt that that self-constituted, foundation-subsidized Committee on the Costs of Medical Care can find (or put) in its general report a lot of language about the "great good dawning of the Brotherhood of Man" and their "burning solicitude for the preservation of the sacred relation between the Patient and his Doctor" and all that sort of stuff, with which those who fought this vicious stuff in 1919 are familiar. St. Matthew XXIV, 24 is worth reading in this regard:—

"For there shall arise false Christs and false prophets; and shall show great signs and wonders, inasmuch as to deceive (if possible) even the elect. . . . If, therefore they shall say 'Behold! He is in the closet—believe it not.' "

The moneybund Foundations know, and this Committee that spent their Million dollars should know what the average business man knows that a Medical Center would be a discord-center within a week of its opening day unless one of two influences controlled its operation—money or power; mutual profit, in coin or in kind, flowing to the organizers themselves, or political domination by laymen, *speaking with authority* of the State or (as the Committee's Report indicates) the Nation. Between cupidity and Federalized, Politicalized, control the sick American citizen would not have a Chinaman's chance.

The expression of Moran and Mack, "Even was it good, I wouldn't like it" would seem to apply to this Committee's five-year Million Dollar plan which one of the Committee refused to sign because it had gone far afield and away from the original plan of the Committee which was to study "The Cost of Medical Service." not the "Costs of Medical Care." You may not see the distinction right away but the business man would. It is the difference between studying the cost of a product (Medical service) with elimination or reduction of wastage and duplication; and studying the best means of distributing it through a market for the best price that advertising and ballyhoo can get.

J. J. A. O'REILLY, M. D.

SOME ODD FACTS ON HAY FEVER

Chicago, Ill., Sept. 14, 1933.

To the Editor: In the September, 1933, issue of the ILLINOIS MEDICAL JOURNAL (p. 228) under the caption of "Some Odd Facts on Hay Fever" you quote an instance of "hay fever the year around" or hyperesthetic rhinitis, due to orris root cosmetics, which was reported by the University of Maryland Hospital. Your remarks and citation of this case tend to give the impression that this is rare or "odd" or new. For fear that some physicians may venture to obtain such an opinion I wish to quote a few of the reports in the literature concerning this subject.

In 1916 (Goodale, L. J.: Boston M. & S. J., 175:181, 1916) several instances of orris root sensitization among other substances as causes of hyperesthetic rhinitis were reported. In 1920, (Walker, I. C., Frequent Causes and the Treatment of Perennial Hay Fever, J.A.M.A., 75:783, 1920) case reports of hyperesthetic rhinitis due to orris root cosmetics are cited. Cooke, in 1922, reports that out of a total of 327 instances of asthma and hay fever, 47 were sensitive to orris root (Cooke, R. A.: Studies in Specific Hypersensitiveness, J. Immunol., 7:147, 1922). Spain, in 1925, says "Face powders, sachet powders, talcum powders, tooth powders, in fact all toilet powders, contain orris root, rice powder or corn-starch, three substances which are very common causes of coryza" (Spain, W. C., The Diagnosis and Treatment of Atopic Coryza, Annals Otol. Rhin. & Laryng., 34:1089, 1925). Rackemann, a very conservative specialist in allergy, reports (Rackemann, F. M., Can Hypersensitiveness be acquired?, J.A.M.A., 84:489, 1925) that 44 out of a series of 428 perennial hay fever cases were sensitive to orris root.

Reviewing the sensitizations of 105 hay fever patients in the Southwest, seasonal and non-seasonal, Phillips finds (Phillips, E. W., Orris Coryza, Southwest Med., 11:299, 1927) that 6.6% were sensitive to orris root exclusively and 24.7% to orris root in addition to other allergens. Balyeat's figures on the incidence of orris root sensitization in hyperesthetic rhinitis vary from 20 to 40 per cent.

In my own figures 10 per cent. of all allergy patients (including asthma, hay fever, hyperesthetic rhinitis, urticaria, etc.) are sensitive

to orris root. In the group of hyperesthetic rhinitis cases the percentage of orris sensitization is even higher. As a matter of fact, it is about the most common allergic cause of this complaint. Occasionally even "seasonal hay fever" may be due to orris-containing cosmetics (Feinberg, S. M.: Seasonal Hay Fever Not Due to Pollen. *Ann. Int. Med.*, 3:1035, 1930).

With regard to the case of canary feather sensitization, although comparatively rare, the case cited is not the first on record.

S. M. FEINBERG, M.D.

EDUCATIONAL COMMITTEE

June, July, August, September, 1933

PRESS SERVICE

- 2,371—Regular press service
- 87—Monthly service
- 41—Newspapers, re clinic handicapped children Jackson County
- 63—Newspapers, re clinic handicapped children Whiteside County
- 72—Newspapers, re clinic handicapped children Whiteside County
- 101—Newspapers, re postgraduate course in Pediatrics, McLean County Medical Society
- 79—Newspapers, re postgraduate course in Pediatrics, Warren County Medical Society
- 70—Newspapers, re meeting Schuyler, Fulton County Medical Societies at Scripps Park, Rushville
- 120—Newspapers, re typhoid situation—Adams, Alexander, Calhoun, Champaign, Clay, Fayette, Jackson, Knox, McLean, Macon, Marion, Massac, Pulaski, Randolph, Saline, Scott, Union, Warren, Wayne, White, Whiteside, Will, Williamson counties. Reports from State Department of Health indicated typhoid prevalent in these counties
- 20—Newspapers, re lectures of medical women at Navy Pier
- 70—Newspapers, re pediatric meeting at Quincy
- 113—Newspapers, re pediatric postgraduate course in LaSalle
- 34—Newspapers, re meeting of Monroe County Medical Society
- 58—Newspapers, re meeting McLean County Medical Society
- 59—Newspapers, re meeting 5th Councilor District
- 5—Newspapers, release giving resolutions passed by the Aero-Medical Association
- 2—Newspapers, notices of meeting of Branches of Chicago Medical Society

2,374—Total releases

Health educational articles written for release to newspapers through county medical societies:

- Ivy Poisoning
- Whooping Cough

- Hardening of the Arteries
- Mumps
- Ear Diseases and Swimming
- The Mosquito Nuisance
- Use and Abuse of Cathartics
- Convulsions in Children
- The Summer Appetite
- Fears & Superstitions of Pregnancy
- Adopting a Child
- Chronic Arthritis
- Early Recognition of Infantile Paralysis
- Rabies Prevalent
- Encephalitis
- Whooping Cough Prevention
- Importance of the Diagnosis of Gall Bladder Disease

- Appendicitis & Cathartics
- Causes of Acne (Pimples)
- Some Do's and Don'ts for Parents
- Posture as Conditioned by the Emotions
- Typhoid Fever Widely Prevalent
- Aids for Inducing Sleep
- Growing Feet
- The Eyes of the Child
- The Child's Mental Development
- Talking About Cancer
- School Health and Economy
- Aches and Pains
- Botulism or Food Poisoning
- Children's Growth

RADIO

- 77—Radio programs given from WAAF, WGN, WJJD.
- Franklin J. Corpoer—Convulsions in Infancy and Childhood.
- Austin K. VanDusen—Children and Good Sense.
- Edmund H. Droegenmueller—Diphtheria.
- M. A. Perlstein—A School Health Inventory.
- J. M. Tindal—The Causes of Eyestrain.
- Esther K. Frankel—Aches and Pains.
- Clarence K. Jones—Abdominal Pain.
- W. A. Hendricks—Cancer.
- V. R. Stephens—First Aid in Automobile Accidents.
- J. A. Riedel—Humidity and Health.
- Hartley F. Mars—Diseases of the Gall Bladder.
- H. A. Sofield—Side-Show Freaks.
- William E. Cary—Botulism.
- W. L. Waner—Cancer of the Stomach.
- Marion S. Fink—Birth Marks and Moles.
- Edmund Jacobson—Waste of Nervous Energies.
- George M. Lucas—Appendicitis.
- Leo P. A. Sweeney—Crossed Eyes.
- Ralph H. Kunstadler—Obesity in Children.
- Eugene Birchwood—Hygiene of the Heart.
- C. Herbert Brush—Care for the Expectant Mother.
- Wm. H. Howard—Periodical Examinations of Children.
- Elmer E. Collins—Healthful Activities.
- Clarence F. G. Brown—Prevention of Ulcers.
- Ruben Nomland—Ringworm of the Feet.

Harry Olin—X-Rays and Health.
 Earl R. McCarthy—Acute Bone Infections in Children.
 John G. Frost—First Attention to the Seriously Injured.
 Laurence E. Hines—Heart Disease After Middle Age.
 William L. Beecher—Food Allergy.
 Arthur J. Coombs—Infections Caused by Swimming.
 Philip D. O'Connor—Glaucoma.
 Johanna Heumann—Traveling With the Baby in Summer.
 A. J. Petersen—Bacteria.
 Emil Deutsch—Injuries of the Eye.
 W. D. McNally—Poisons.
 A. M. Stober—Germs and Disease.
 John J. Pflock—Dangers of Unsupervised Reducing.
 Wm. H. Howard—Importance of Correcting Defective Vision.
 R. L. Reynolds—Rabies.
 G. P. Guibor—What We Know About Hayfever.
 Arthur Stenn—Summer Diarrhea.
 G. H. Gowen—A Clean Skin and Health.
 M. M. Kunde—Endocrine Influence on Growth and Development.
 Maurice Dorne—Acne.
 S. D. Zaph—Boils and Carbuncles.
 John S. Ashby—What Is Indigestion?
 Arrie Bamberger—Importance of Slight Injuries and Skin Infections.
 C. W. Finnerud—Care of the Skin in Summer.
 W. Lloyd Kenny—Abdominal Pain.
 Paul W. Greeley—Fractures.
 Elmer W. Hagens—What to Do When Your Child Chokes.
 J. Major Green—Appendicitis and Cathartics.
 Earl S. McRoberts—Eyes and Nose in Ragweed Season.
 Charles M. Jacobs—Infantile Paralysis.
 Arthur S. Sandler—The Healthy Baby.
 I. Pat Bronstein—Anorexia.
 Albert Seidel—Care of the Baby in Summer.
 Harry Faulkner—Convulsions in Children.
 Earle J. W. Pronger—The PreSchool Child.
 Louis Sauer—Nursery Care and Personal Hygiene.
 B. Rappaport—Early Recognition of Infantile Paralysis.
 Willis J. Potts—Acute Appendicitis in Children.
 Louis J. Brody—Nutritional Anemia of Childhood.
 Gilbert P. Pond—Mental Development of Childhood.
 Julius H. Hess—The Infant.
 Clarence W. Rainey—Children's Eyes.
 Samuel J. Lang—Chronic Arthritis.
 Joseph K. Narat—Cancer.
 Clayton J. Lundy—Prevention of Heart Disease.
 J. F. O'Malley—Deformities of the Feet.
 A. L. Williams—Dietetics in Hot Weather.
 A. W. Stillians—Questioning the Skin.
 William Alfred Mann—The Eyes of the Child.
 Edwin A. Wegner—Foreign Substances in the Eyes.
 A. S. Hershfield—Escaping Responsibilities.
 Carroll Eugene Cook—Heat Stroke or Sun Stroke.

W. M. Hanrahan—Fears and Superstitions of Pregnancy.

The Committee furnished radio talks to LaSalle County Medical Society for broadcast from a local station.

As a courtesy to the Chicago Dental Society, the radio time usually filled by the Educational Committee during the week of August 7, was given over to dentists to broadcast for the Dental Congress.

Copies of radio talks furnished listeners in Iowa, Michigan, Indiana, Wisconsin and Illinois.

SPEAKERS' BUREAU:

75—Speakers scheduled for lay meetings—
 Men's club of a church
 Kiwanis
 Women's Clubs
 Lions
 College groups
 Teachers Institutes
 Rotary
 Nurses Association
 Parent Teacher Associations

One of the big things in connection with the Speakers' Bureau during the summer months, has been the scheduling of speakers for the Chicago Medical Society series of lectures at the Hall of Science, A Century of Progress. The Educational Committee has scheduled four physicians every week and will continue to do so throughout the remainder of the Fair. Each of these lectures has been attended by between 150 and 250 people. The following schedule was arranged for July and August:

William Allen Pusey—Plans and Purposes of the Medical Exhibits.

Walter Fischer—Foot Problems.

Lathan A. Crandall—Progress in the Control of Pain.

Aaron Arkin—The Factors of Safety in the Human Body.

M. J. Hubeny—Story of X-Ray and Radium.

J. Roscoe Harry—Why Men Break Down Between 40 and 55.

H. W. Elghammer—Rheumatism in Children.

Robert W. Keeton—Fat and Thin.

Kenneth K. Jones—Vitamines.

Philip Lewin—Infantile Paralysis.

John Wolfer—Cancer of the Breast.

Gilbert FitzPatrick—The Cinti Film.

George B. Lake—Mental Hygiene.

Fremont A. Chandler—The Crippled Child.

Clifford J. Barborka—Diet in Health and Disease.

Francis E. Seneer—Care of the Skin.

Max Cutler—Cancer.

Elmer Kenyon—Disorders of Speech.

S. M. Feinberg—Hay Fever.

Charles F. Read—Mental Health.

Hart E. Fisher—Demonstration of Evolution of Resuscitation.

I. Harrison Tumpeer—Allergy in Children.

R. K. Packard—Health Examinations.

Meyer Solomon—Mental Health.

Alex S. Hershfield—Control your Emotions.

Austin A. Hayden—Conservation of Hearing.

Laurence Hines—Heart Disease.

J. Roscoe Harry—Heart.

Tell Nelson—Hay Fever.

Ralph H. Kunstadter—Endocrine Glands in Children.

Frank Jirka—Cancer.

Charles Schott—The Common Cold, Upper Respiratory Infection, Its dangers and Prevention.

Frederick B. Moorehead—Cancer of the Mouth and Jaws.

Frederick Christopher—Everyday Surgical Emergencies.

Gilbert P. Pond—The Development of the Mind of Youth.

Arthur J. Cramp—Pink Pills and Panaceas.

Frank P. Hammond—Turning Back the Human Clock.

C. F. Sawyer—Gall Bladder.

Robert S. Berghoff—Heart Disease.

W. W. Bauer—Popular Beliefs Which Are Not So.

Aaron Arkin—Heart Disease.

Edward Lyman Cornell—Prenatal Care.

A new list of suggested subjects was compiled early in the summer and sent out to all organizations using the Speakers' Bureau during the past two years; lists also sent to the officers of all county and branch medical societies in the state. An article announcing this service to the public appeared in the Illinois Health Messenger for August 15.

Doctor Camp gave a paper about the work of the Educational Committee of the Illinois State Medical Society at the Secretaries Conference of the American Medical Association in September.

Doctor Ferguson has been invited to give a paper at the conference of School Physicians preceding the meeting of the American Public Health Association at Indianapolis in October.

SCIENTIFIC SERVICE

3—Clinics for Crippled Children:

Whiteside County

Jackson County

Warren County

6—Pediatric Postgraduate Courses in the following counties:

Warren County

McLean County

Quincy (Adams County)

Peoria

Winnebago

LaSalle

2—Speakers for Perry County.

1—Speaker for annual meeting of Vermilion County Medical Society.

3—Speakers for LaSalle County.

1—Speaker for Sherman Hospital Staff—Elgin.

1—Speaker for Monmouth Medical Club.

1—Program for Rock Island County Medical Society.

2—Officers of State Medical Society on program of

annual meeting of the Illinois Tuberculosis Association.

1—Speaker for DeKalb County Medical Society.

1—Program on Sleeping Sickness for Monroe County Medical Society Educational Committee sent out press releases and invitations to all doctors in that section announcing this program.

2—Programs for Will-Grundy County Medical Society. Thomas P. Foley—Medical Economics. Francis E. Senear—The Role of Fungus Infections in Dermatology.

A new list of speakers and subjects for county medical society programs was compiled, mimeographed and sent to all officers of medical societies. The number of speakers has grown considerably during the past four years and it is not at all difficult to arrange interesting programs for any section of the state.

MISCELLANEOUS

Following the publication in the Illinois Medical Journal of the list of package libraries available in the office of the Educational Committee numerous requests have come for the loan of this material. Members of the medical society may borrow these package libraries for a period of two weeks; they are especially helpful to physicians preparing lectures or papers for lay use.

Chairman of the Education Committee of Wayne County Medical Society (Michigan) visited office of the Illinois State Medical Society Educational Committee.

Conference with officers of American College of Surgeons concerning radio broadcasts during the October meeting of that organization.

Assisted Woman's Auxiliary of Chicago and State Medical Societies.

Attended annual meetings of the American Medical Association, Illinois Society for Prevention of Blindness, Chicago Medical Society, National League for the Hard of Hearing, Secretaries Conference of the American Medical Association.

Publicity given to the exhibits of the Chicago Medical Society at A Century of Progress.

300—Outlines for public health work mimeographed for the Illinois Federation of Women's Clubs.

Moving picture films secured for doctors.

Respectfully submitted,

JEAN McARTHUR,

Secretary.

AUXILIARY NOTES

Greetings to the Members of the Woman's Auxiliary to the Illinois State Medical Society:

I am more than glad to have this opportunity to extend my greetings and sincere good wishes to the Woman's Auxiliary to the Illinois State Medical Society.

In our democratic plan of medical and auxiliary organization, the county medical society is the basic unit. It is the only door through which admission may be secured to the state, and national auxiliaries. It is the sole judge of the applicant's membership qualifications.

It is the local representative of the state and national organizations. It is the most important unit and therefore has certain very definite and grave responsibilities.

When the county society auxiliary fails, the state and national groups fail. The state auxiliary is strong, active and achieving, only when its component county auxiliary units seriously assume and discharge their responsibilities. The parent organizations are dependent upon their basic units. I believe that this fundamental fact is too often overlooked or ignored by the members and officers of both state and county auxiliaries.

I am a firm believer in state's rights. I plan to stress the educational program, the public relations program, the advance of Hygeia for each individual state, and a system of press and publicity work among members of neighboring state auxiliaries.

At present we all realize that the auxiliary picture is changing almost by leaps and bounds; it is hard to keep pace with the times, but state by state and each county with its state joining in working plans, our picture can be kept to its true color scheme. Our brushes must never be idle, our color tubes must be every ready to tint, daub, or even splash on the paint. Our committee chairwomen are all skillful artists in their line of work, and will be ever ready to suggest the right shade of blue, red, green or brown which you need to make your state picture worth the painting.

I believe every state and county president should make a systematic search for wasted effort in her county organization; should try to fill gaps, eliminating all overlapping in the program of work. It may be regarded as axiomatic that wherever mass activity or interest is concerned, a group must either *lead* or be *led*. I firmly believe there is no third possibility. The lead for all things in which medicine has close contact, and in which medical science or practice plays the vital role, should be taken by medical organizations and their lay representatives, the auxiliaries.

Our imperative need today is an undistorted sense of values, constructive thought, logical reasoning and sound judgment, combined with common sense and "team work." We as "doctor's wives" know that to no one is life level all the way; there are depths to go through, and heights to climb, and we need courage and inspiration.

We all realize the most helpful element toward the doctor's success is the wife who is interested in her husband's profession, the most helpful single thing to the Medical Profession is the organized effort of the physicians' wives as represented in the Auxiliary. The physician of today is like any other business or professional man. He seeks a livelihood and yet wonders how he can better help humanity. His opinions so far as the public is concerned are unbiased. But the Cults credit ulterior motives and his handicaps are great. Now the time has come when the physician's wife should thoroughly know all the problems surrounding his life, and a vast field of educational opportunities opens up to both of them. She can, and will, and is now playing an ever increasing role in this immense field of health education.

Illinois is in the front auxiliary ranks doing a specific specialized piece of Public Relations work—county by county, city by city and club by club.

The past decade has witnessed the expansion of medicine far beyond the giving of drugs and surgery. Its broader opportunities and obligations in social, economic and educational matters in which good health is a dominant factor are apparent as never before. And into this field your Illinois program is fitting splendidly.

There is much that may be done, as outlined in the official program of the Auxiliary of the American Medical Association. But each state and every county in each state will find some local project worthy of their efforts. I desire here to emphasize especially the opportunity afforded for improving in every community the health of the children. It is a fundamental need at the present time. We, of the Auxiliary, know that almost all women's organizations are largely concerned, both directly and indirectly with the progress of scientific medicine, and the women's organizations offer unusual opportunities for presenting to these groups some of the elementary facts regarding the work which the American Medical Association is trying to accomplish.

Membership in lay organizations is essential for there is such a large niche for which just the work of the auxiliary is fitted. Surely where lay dictation of medicine is concerned, especially that section of the attempt put forth by well meaning but misguided organizations of women, the best lay organization in existence, the Doctors' wives, should find a niche to step into and do the guiding. The field is rich with possibilities, and I have watched for years with growing interest the Illinois auxiliary step in gently but firmly with a guiding hand. Concerted effort always accomplishes when individual intention is slow.

It is particularly in the smaller communities in our sparsely settled regions, where social activities are not so multitudinous, that the influence of the auxiliary will be most needed, and most heartily welcomed. If you study the annual State Reports as they will come to you in the Official Record of the Milwaukee meeting, you will realize the Auxiliary has permeated many places, and has really stirred up a great deal of thought, and made for better things in many directions. And I trust that with the same good sense and the same conservative attitude toward medical problems in general, which have characterized the auxiliary to date, it will continue. It is my fondest wish that we may have throughout the country a strong, sensitive organization which shall constantly be alive to the public pulse, and ready and willing to initiate any activity the Advisory Board of a county deems wise. You in Illinois have been blessed with much success along this line to date. May it continue.

I certainly wish for you the superlative of success, and may the pleasure of duty well done be yours.

MRS. JAMES BLAKE, President

Woman's Auxiliary to the American Medical Association.

STATE PRESIDENT OF THE AUXILIARY HONORED

The members of the Vermilion County Medical Auxiliary gave a dinner at the Danville Country Club, Tuesday evening, September 5, honoring Mrs. Solomon Jones, the State President. There was a large gathering of the members, all joyous and happy to pay high honor to Mrs. Jones who has been an enthusiastic and tireless worker in her home auxiliary, since its organization about six years ago.

Mrs. Jones, one of Danville's most prominent women, has had many years of experience in the county and state work. The Vermilion County Auxiliary is very proud of her and predicts, with her ability, good judgment, sound wisdom and tactfulness, an outstanding year for the state organization, under her leadership.

During the dinner special music was enjoyed and later the guest speaker, Mrs. Philip Kreuscher, the state organization chairman, gave a very interesting talk to the auxiliary unit.

ADVISORY COMMITTEE

- Dr. R. R. Ferguson, Chairman
4013 Milwaukee Avenue,
Chicago, Illinois
- Dr. Charles J. Whalen,
25 East Washington Street, Chicago, Ill.
- Dr. John R. Neal,
Springfield, Illinois
- Dr. Harold M. Camp,
Monmouth, Illinois
- Dr. Charles D. Center,
Quincy, Illinois

COUNTY PRESIDENTS

1. Carroll County: Mrs. G. H. Cottral, Savanna, Illinois.
 2. Coles and Cumberland County: Mrs. Sherman E. Bigler, Neoga, Illinois.
 3. Cook County: Mrs. Lucius Cole, 1117 North Lathrop Avenue, River Forest, Illinois.
- Branches: Aux Plaines—Mrs. H. M. Peterson, 1127 North Le Claire Avenue, Chicago, Illinois; Englewood—Mrs. D. A. Vloedman, 12152 St. Ann Street, Chicago, Illinois; Jackson Park—Mrs. Meyer Solomon, 5426 East View Park, Chicago, Illinois; North Shore—Mrs. F. O. Fredrickson, 1214 Elmdale Avenue, Chicago, Illinois; North Side—Mrs. Michael Mason, 2258 Lincoln Park West, Chicago, Illinois.
4. Douglas County: Mrs. E. S. Allen, Arcola, Illinois.
 5. Kane County: Mrs. Imas P. Rice, 727 North Oak St., Aurora, Illinois.
 6. Livingston: Mrs. E. G. Beatty, 621 West Lincoln Street, Pontiac, Illinois.
 7. McLean County: Mrs. H. W. Grote, 505½ North Evans Street, Bloomington, Illinois.
 8. Marion County: Mrs. William N. Hamilton, Odin, Illinois.
 9. Randolph County: Mrs. J. W. Beare, Chester, Illinois.

10. St. Claire County: Mrs. I. L. Foulon, 608 Washington Street, East Saint Louis, Illinois.

11. Rock Island County: Mrs. W. D. Chapman, Silvis, Illinois.

12. Sangamon County: Mrs. E. E. Heglar, 1900 West Lawrence Avenue, Springfield, Illinois.

13. Vermilion County: Mrs. O. W. Michaels, Muncie, Illinois.

14. Will-Grundy County: Mrs. L. J. Fredrick, 420 Richard Street, Joliet, Illinois.

The President, Mrs. Solomon Jones, announces that Mrs. Charles D. Center of Quincy has consented to accept the office as councilor of the sixth district on the board of directors—Woman's Auxiliary to Illinois Medical Society.

Mrs. Center is the wife of Dr. Charles D. Center, president-elect of the Illinois State Medical Society and a member of the Advisory Committee to our Auxiliary. She will bring to the board her valuable judgment acquired through years of active service in women's civic organizations and the Illinois Congress of Parents and Teachers in the Western part of the state.

The next meeting of the Board of Woman's Auxiliary to the Illinois State Medical Society will be held Saturday morning, November 18, 10:00 o'clock, the Stevens Hotel, Chicago.

The State Auxiliary extends sympathy to Mrs. Solomon Jones, our president, because of the recent death of her sister.

The officers of the Woman's Auxiliary to the Chicago Medical Society were entertained at a delightful tea on Wednesday afternoon, September 20, at the home of Mrs. William R. Cubbins, state chairman of the Public Relations Committee. The purpose of this meeting was to discuss a plan of work for the state Public Relations Committee. Mrs. Cubbins outlined a splendid new program which she had previously presented to officers of the Society and members of the Educational Committee.

Plans were fully discussed for the first public meeting to be sponsored by the Woman's Auxiliary to the Illinois State Medical Society and the Woman's Auxiliary to the Chicago Medical Society. This meeting will be held at the Illinois Host House, A Century of Progress on Wednesday, October 11, 1933, 11:00 to 12:00 A. M. The speaker will be Doctor Charles F. Read, Managing Officer, Elgin State Hospital, the subject, "Mental Health." Mrs. Solomon Jones, the state president and Mrs. Lucius Cole, state president-elect and president of the Chicago Auxiliary will preside.

A luncheon has been arranged following the lecture in the Trustees' Lounge, the Hall of Science. Physicians and their wives are cordially invited to attend the lecture and luncheon.

CANCER MORTALITY HIGHER IN 1932 THROUGHOUT THE UNITED STATES

According to The Statistical Bulletin of the Metropolitan Life Insurance Company, The Cancer Mortality was Higher in 1932 throughout the United States, we quote:

"Even when half of 1932 had elapsed, there were unmistakable indications that the year was destined to record a considerable rise in the cancer deathrate in the United States and that, at the completion of the year, the mortality from this disease would register a new maximum. We forecast this result in the *Statistical Bulletin* of July, 1932, basing our judgment on the unprecedented rise in deaths from cancer among the many millions of Metropolitan Industrial policy-holders. The facts for this large group of people (which become available months before it is possible to obtain like information for the general population of the country) have always proved to be a good index of what is happening to the people of the country as a whole.

Recently there have come to hand preliminary mortality reports, for the year 1932, issued by the Bureau of the Census; and these show definitely that a large increase in cancer deaths in 1932, throughout the United States, actually occurred. These Government reports relate to 30 states, comprising 47 per cent. of the population of continental United States. There were increases in 25 of them. The 1932 cancer deathrate in this area was 2.7 per cent. higher than the previous maximum, recorded in 1931. The rise would have been much greater but for the fact that New York, the most populous state, comprising nearly one-quarter of the people in these 30 commonwealths, registered the relatively small increase of 1.3 per cent. in cancer mortality last year.

In two of the 30 states, the cancer deathrate rose more than 20 per cent. in 1932; and in seven states, more than 10 per cent. In Nevada, Montana and Vermont, respectively, the enormous increases of 29 per cent., 22 per cent. and 17 per cent. were registered. Nine states recorded increases from 5 to 10 per cent.

Particular interest attaches to the facts for New England, where all six states show large rises: 4.9 per cent. in Massachusetts; 5.4 per cent. in Maine; 6 per cent. in Connecticut; 7.2 per cent. in Rhode Island; 11.1 per cent. in New Hampshire, and 17.3 per cent. in Vermont. In these states there is a more rapidly increasing proportion of persons in the higher age groups than obtains for the country as a whole; and this may explain, in part, the very considerable increase in cancer mortality in New England. In other parts of the country, the more note-worthy rises were 7.4 per cent. in Colorado; 9.5 per cent. in Delaware; 10.8 per cent. in Idaho; 7.7 per cent. in Kansas; 5.4 per cent. in Maryland; 22.2 per cent. in Montana; 12.0 per cent. in New Mexico; 29.3 per cent. in Nevada; 11.5 per cent. in North Dakota, and 8.1 per cent. in West Virginia. Certain of these states have small populations, and in them we must not attach too much significance to large per cent. increases in a single year. In Nevada, for example, the 29.3 per cent. rise in the cancer deathrate is based on 65 deaths in 1931, and 85 in 1932. The data from these 30 states thus clearly indicate that the cancer rate increased appreciably, last year, throughout nearly one-half of the population of the United States, although negligible declines were recorded in New Jersey, Arkansas and Washington, together with de-

creases of 3.5 per cent. and 4.2 per cent. respectively in Georgia and Wisconsin.

Census Bureau mortality reports for 1932 from such populous states as Pennsylvania, Illinois, Ohio, Michigan and California are not available, as yet and will be awaited with keen interest. Lacking them, we cannot tell whether the rise in the cancer deathrate for the entire country, in 1932, was more—or less—than the 2.7 per cent. shown for this group of 30 states. Enough is already known, however, to make it very probable that the increase in the cancer deathrate throughout the United States, in 1932, was greater than average annual increment recorded over the ten preceding years. The persistent rise in the mortality from this disease, coupled with the marked acceleration in more recent years, is a disquieting item in the public health picture of the country.

The table below shows the deathrates from cancer, in 1932 and 1931, in these 30 states together with the per cent. increase or decrease in each."

STATE	DEATHRATE PER 100,000 POPULATION		PER CENT. CHANGE 1932 FROM 1931
	1932	1931	
TOTAL.....	108.5	105.6	+ 2.7
Arkansas.....	44.4	45.1	- 1.6
Colorado.....	105.4	98.1	+ 7.4
Connecticut.....	124.4	117.4	+ 6.0
Delaware.....	121.3	110.8	+ 9.5
Georgia.....	53.0	54.9	- 3.5
Idaho.....	77.2	69.7	+10.8
Indiana.....	113.6	108.4	+ 4.8
Iowa.....	121.1	118.7	+ 2.0
Kansas.....	104.3	96.8	+ 7.7
Louisiana.....	73.6	69.8	+ 5.4
Maine.....	147.3	139.8	+ 5.4
Maryland.....	116.9	110.9	+ 5.4
Massachusetts.....	143.0	136.3	+ 4.9
Minnesota.....	127.7	123.4	+ 3.5
Mississippi.....	55.7	55.4	+ 0.5
Montana.....	95.4	78.1	+22.2
Nebraska.....	102.7	102.6	+ 0.1
Nevada.....	91.4	70.7	+29.3
New Hampshire.....	160.5	144.3	+11.2
New Jersey.....	111.0	112.2	- 1.1
New Mexico.....	51.3	45.8	+12.0
New York.....	127.5	125.9	+ 1.3
North Dakota.....	76.4	68.5	+11.5
Rhode Island.....	142.3	132.7	+ 7.2
South Dakota.....	82.0	80.2	+ 2.2
Vermont.....	140.0	119.4	+17.3
Washington.....	113.4	116.1	- 2.3
West Virginia.....	63.7	58.9	+ 8.1
Wisconsin.....	113.4	118.4	- 4.2
Wyoming.....	69.0	65.8	+ 4.9

Source: *Provisional Mortality Statistics*. United States Bureau of the Census.

THE APPENDICITIS RATE

In a recent issue of *The Spectator*, F. L. Hoffman urged that more attention be accorded to the high death rate in this country from appendicitis. According to a recent bulletin from the New York City Department of Health, Hoffman cites the appendicitis mortality in sixty American cities from 1910 to 1931, inclusive, and shows that there has been practically no change in the mortality rate during the period.

Original Articles

THE CHOICE OF CATARACT EXTRACTION FOR SENILE CATARACT*

OSCAR B. NUGENT, M.D. AND WM. A. FISHER, M.D.†

CHICAGO

The ideal in cataract surgery is a method by which the lens can be removed within the capsule with the least trauma to the eye and one which allows all of the various parts to remain in as near a normal position in relation to each other as is possible.

In order to arrive at the ideal, there must be a perfect coaptation of the wound edges and the wound properly secured by sutures to assist in preventing its reopening. The iris shall not have been injured during operation, the sphincter intact, the pupil round; there should be no broken continuity of the vitreous body, and the lens must have been removed within its capsule.

In another paper,¹ read elsewhere, it was stated that traction, with more or less external pressure, should be the principle upon which all cataract technic should be based. The reason for this is that least trauma to the eye is produced by this method of applying motive power to the lens than by any other method.

It is not necessary for any operator to choose the type of operation he is to use wholly upon the advice of any of the various experienced operators. The type of operation he is to employ should be chosen from the results of his past experiences, for his future success will depend upon a technic, which will best allow him to operate with the least number of complications. However, there are certain fundamentals which should not be overlooked. These will be spoken of later.

Meller² rejects as unsuitable for general adoption, the Smith-Indian and the Barraquer operations. This statement may be justifiable in a measure, but not wholly so for while there is no doubt the Smith-Indian method has its objections which are obviously found in the principles upon which it is designed; nevertheless, much credit is due Smith and his form of operation for the present day advancement

in cataract extraction. The objections to the Barraquer operation, however, cannot be found in its principles for here we have the most perfect and ideal method of extraction of all forms, and the objections can only be found in the machinery necessary for its use. Fisher^{3,4} has greatly simplified the suction apparatus which he has described. Few operators in America are using the suction method, among them being Green Brothers of California, Crossley of Chicago,⁵ Wolfe,⁶ the authors³⁻³ and others.

Extraction by the forceps method, when successful, is an ideal operation and can be made successful in a large percentage of cases by the highest trained operators. Many good operators prefer this method, among whom are Kalt, Elschmig, Safar, Suker, Gradle, Gifford of Chicago, Knapp of New York,⁹ O'Brien of Iowa City,¹⁰ Mills of California¹¹ and others. The advantage in the forceps operation is found in its simplicity and the lack of so-called complicated machinery and instruments. Its principal drawback is the higher percentage of burst capsules.

In case of success in both the forceps and the Barraquer operations there is essentially no difference for in each case the extraction was affected by traction. The suction method, in our opinion, is the most desired, however, because of the fewer broken capsules, which is more than enough in its favor to offset its chief objection, i. e., the necessity for vacuum-producing machinery. It is obvious, therefore, that the best trained forceps operator cannot reduce his percentage of broken capsules as low as can the experienced Barraquer operator.¹² Harrison,¹³ in a resume of 117 cataract extractions performed by Prof. Barraquer in his presence, gives the percentage of broken capsules at approximately 1 per cent. Such a low percentage of broken capsules is not accredited to the forceps method of extraction. Elschmig¹⁴ reports 69.2% of unbroken capsules.

The Barraquer operation has another advantage, and that is that all, except dislocated, lenses can be grasped with the suction¹⁰ but not all lenses can be grasped with the forceps. Kadlicky¹⁵ states that in his series of cases, it was impossible to grasp the capsule in 23% of cases; therefore, in nearly one out of every four cases he must employ some other technic,

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if he wishes to still use traction which is his operation of choice.

Menacho¹⁶ sets forth the idea the while we are waiting for the surgical ideal of a perfect intracapsular operation or for the medical ideal of cataract prevention, cystotomy must be resorted to, but the authors cannot imagine a reason for such a statement.

A few years ago when the Smith-Indian operation occupied the attention of the ophthalmic world, vitreous loss was an outstanding complication and was frequently reported as being from 7 to 20 per cent, while broken capsule was very seldom tabulated among the outstanding complications; but, today, broken capsule is receiving greater attention due to the changing from expression to traction as the motive power of extraction.

Following is a short resume of the preliminary examination, preparation and method of cataract extraction which has served us best: *Preliminary Examination:* This should consist of taking of the blood pressure, intraocular tension, x-ray of the teeth and sinuses, examination of the nose, mouth and throat, blood sugar, blood urea, blood Wasserman and Kahn tests, basal metabolism, smear and culture of the contents of the conjunctiva and lacrimal sac, and urinalysis. If any pathology is found same should be eradicated and the parts put in as normal condition and as free from pathology and infection as is possible.

Preparation: The patient should enter the hospital the day before the operation and after the above examinations have been made. A light evening meal is given; the blood-pressure and ocular tension is again taken; the patient is bathed and given an enema and 10 grains of barbital at bed-time to induce rest and sleep the night before the operation. Three hours before the operation 10 grains of barbital are again given.

The morning of the operation, an ointment of euphthalmine and cocain, 5 per cent, is placed in the conjunctival sac. This is repeated every hour until time of the operation. This will cause the pupil to dilate without paralysis of the sphincter pupili in order that the pupil can be contracted by eserine immediately after the cataractous lens has been delivered through the large pupil. Atropine is used instead of cocain and euphthalmine to dilate the pupil in

cases where it has been previously decided to perform a complete iridectomy before extraction as in the case of younger patients with early or pre-senile cataract in whom an intracapsular extraction is to be attempted; also in cases of intumescent cataracts and other types of cataract with weak capsules as determined by slitlamp examination.¹⁷

If in cases of high blood pressure, an attempt at reduction has not brought it below 170, then from 200 to 250 cc. of blood should be drawn from the vein one-half to one hour before operation as described by Elschmig.¹⁴

Preparation on operating table: The eyelids and surrounding area are washed with soap and water and the eyelashes are cut off. Three instillations of a 5 per cent cocain solution are made at intervals of 5 minutes and the skin of the eyelids and face is painted with a 5 per cent tincture of iodine solution and the face is draped with a thin gauze moistened with a bichloride solution (1-2000) with an aperture large enough to expose the orbit only.

Akinesis and anesthesia are now performed according to the Nugent and Van Lint methods, which are as follows:

Nugent's Method of Anesthesia: With a 2 cc. syringe and a very fine, sharp needle, two minims of a 1 per cent. novocain solution is injected into the skin at five different places as indicated in Figure 1; once in each eyelid

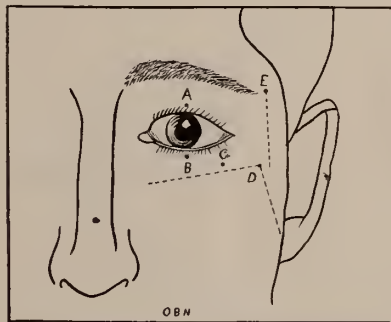


Fig. 1. Nugent's five points of anesthesia.

where the suture is to be placed (A&B); the third injection is placed 15 m.m. to the nasal side of the external canthus and just above the lower bony margin of the orbit (C), at the place where the needle passes through the skin while doing a deep orbital injection (Fig. 2); the fourth, just 20 m.m. to the temporal side of the third and on a level with it for blocking the seventh nerve (D, Fig. 1) and the fifth

just above the outer end of the brow line to accommodate the needle for blocking the seventh nerve (E, Fig. 1).

One cc. of a 1 per cent. solution of novocain is injected in the region of the ciliary ganglion and two or three drops of a 1 per cent. solution of novocain is injected into the conjunctiva in

tus guides suture, using the superior rectus forceps to pick up the muscle (Fig. 6) while the stitch is being inserted (Fig. 7).

Fisher's lid hooks (Fig. 5) are now put in by the assistant and the superior rectus suture held up by the assistant along with the upper lid hook.

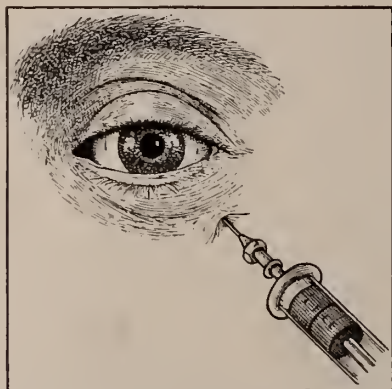


Fig. 2. Deep orbital injection. (Elschnig.)

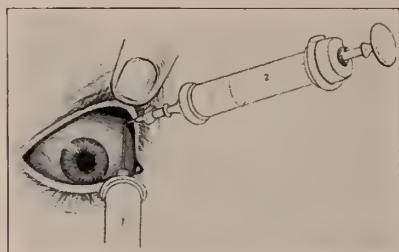


Fig. 3. Superior rectus injection. (Elschnig.)

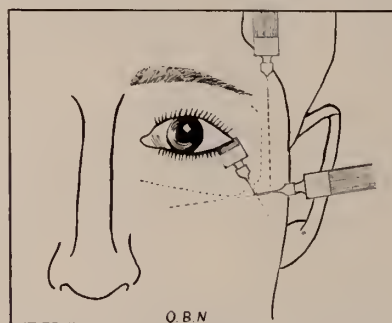


Fig. 4. Van Lint method of akinesis. (Nugent.)

the region of the superior rectus muscle (Fig. 3).

For the blocking of the seventh nerve, 5 cc. of a 1 per cent. solution of novocain is injected in three places according to the method of Van Lint, as illustrated in Figure 4.

The lid stitch is put in, looped and left untied. (Fig. 5).

This is followed by placing the superior rec-

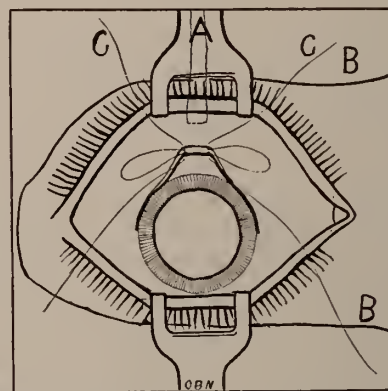


Fig. 5. Showing superior rectus guide suture, lid suture, and conjunctival suture, which latter is in and looped. (Fisher.)



Fig. 6. Nugent's superior rectus forceps. (Nugent.)

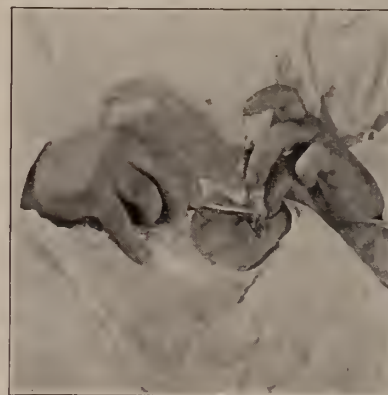


Fig. 7. Use of Nugent's superior rectus forceps. (Nugent.)

The conjunctival sac is irrigated with a 1-4000 solution of bichloride of mercury and the excess removed from the cul-de-sac with a medicine dropper.

Operation: The incision is made in the right eye while the operator stands at the patient's head and in the left eye while he is standing at the left side of the patient, using the right hand with which to hold the knife for making

the incision in either eye. A conjunctival flap is included with the incision (Fig. 8). The cornea is slightly lifted by picking up the conjunctival flap with the cataract utility forceps (Fig. 9) while a small peripheral iridotomy is made at 12 o'clock with DeWecker scissors as described by Elschnig (Fig. 10). Two conjunctival sutures are placed in the conjunctival flap and looped to accommodate the lifting of the cornea for the passage of the lens (Fig. 5).

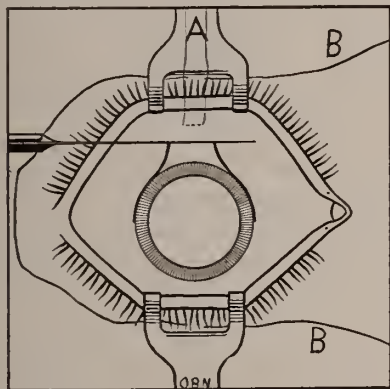


Fig. 8. Including conjunctival flap with incision. (Fisher.)

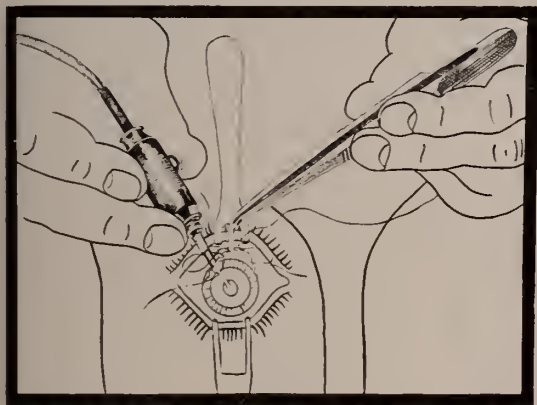


Fig. 9. Picking up the flap with Nugent's cataract utility forceps while the suction cup is being applied, after which it is used as an expression hook to assist in delivering the lens. (Nugent.)

If the sphincter pupili has contracted and caused the pupil to be too small it is better to make a full iridectomy at this time as a coloboma in the iris is preferred to a broken capsule which is liable to result if the pupil is too small and resists the passage of the lens.

Blood in the anterior chamber can usually be removed by allowing a small stream of warm sterile water (Fig. 11) to flow upon the wound edge and at the same time stroke or massage the

cornea from below with the back of the cataract utility forceps.

Lens Delivery: This is accomplished by the use of Nugent's modification of Green's erisaphake (Fig. 12) and the vacuum controlled by the oral valve (Fig. 12): the cornea is lifted by the cataract utility forceps and the erisa-

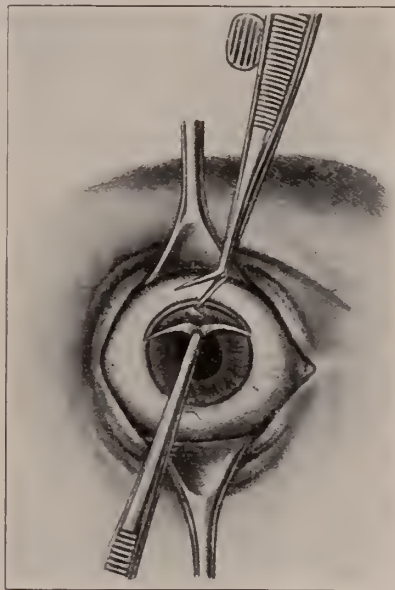


Fig. 10. Making peripheral iridotomy. (Elschnig.)

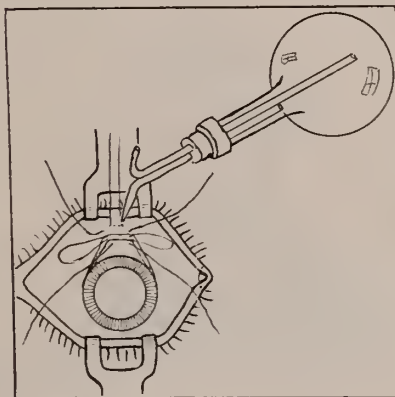


Fig. 11. Removing the blood from the anterior chamber. (Fisher.)

phake placed very lightly and evenly on the lens as low as the pupil will permit, so as to avoid the grasping of the iris. The operator's tongue is then applied to the opening in the oral valve, which is held in the mouth and the erisaphake is held perfectly still for seven seconds, as described by Fisher. It is then moved in such a manner as to move the lens gently from side to side in many directions so as to

put the zonular fibers on the stretch, loosening up the lens quite slowly by rotating the handle toward the operator in the hand between the thumb and fingers, accompanied by a slight rotation of the hand.

The lens is turned so that the lower edge is brought out first (Fig. 13); at the same time the suction cup is being turned. Nugent's cataract utility forceps are closed, placed on the limbus at 6 o'clock where pressure is made to assist in breaking the zonular fibers at this point and as the fibers begin to tear and the

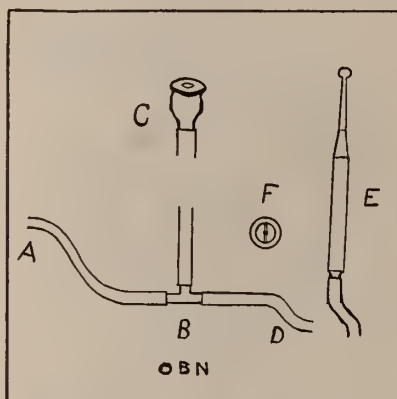


Fig. 12. Nugent's oral vacuum valve and modification of Green's erisaphake. (Nugent.)

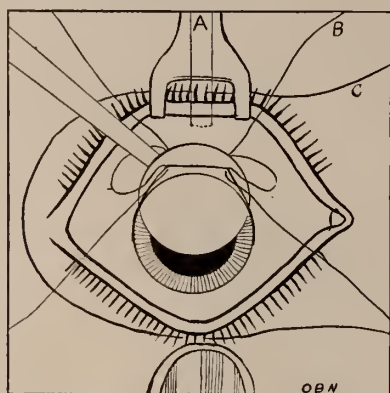


Fig. 13. Removing the lens after it has been tumbled. (Nugent.)

lens is tumbling, the forceps are brought up higher on the cornea, making steady pressure on the lens through the cornea, thus assisting in effecting its delivery, as described in Elsch-nig's¹⁴ and Fisher's books.⁴

As this is one of the most important steps in the operation, some things to be remembered will be re-tabulated below:

1. All blood should be removed from the anterior chamber.

2. The erisaphake should be held lightly in the hand like a writing pen.

3. The cornea should be lifted to give the operator a clear view of the lens.

4. All pressure should be avoided in applying the suction cup to the lens.

5. The suction cup is applied evenly to the lens in such a way that the iris will not be caught when vacuum is created.

6. At least seven seconds should elapse after the vacuum has been created before any attempt is made to move the lens.

7. The first movement to be affected is a gentle slow moving of the lens from side to side and from below upward.

8. The erisaphake is rotated in such a manner as to allow the suction cup to rotate around the lens causing the lens to turn so as to bring its lower edge forward and up while the upper edge goes backward and down.

9. The lens must be turned without depressing it or attempting to raise it until the lower edge is well in the anterior chamber.

10. At the moment the lens starts to rotate the conjunctival flap is released from the cataract utility forceps which is closed and placed on the limbus at 6 o'clock where slight pressure is made towards the optic nerve. To facilitate the breaking of the zonular fibers at this point and as soon as the lens has turned sufficiently to allow the lower edge to appear over the lower border of the pupil, the force is applied upward to the lower surface of the lens and made to assist in its delivery.

11. Every movement should be slow and deliberate.

12. After the lens has been delivered and is still adherent to the erisaphake, it can be used to smooth out the cornea (Fig. 14) and conjunctival flap by massaging the cornea gently with it.

In cases where it has previously been determined by slitlamp examination, or otherwise, that a weak capsule exists, or in case the operator has not chosen the type of suction operation indicated by his past experiences gained by repeated trials, he would break fewer capsules if he would follow the suction technic described by Fisher (Figs. 15 & 16 in which a small suction cup 3x4 mm. is used. This is described as a one-handed operation enabling the opera-

tor to use his best hand which is commendable because so few, if any, operators are ambidextrous.

The lens is delivered by applying the suction cup as low on the lens as the iris will permit

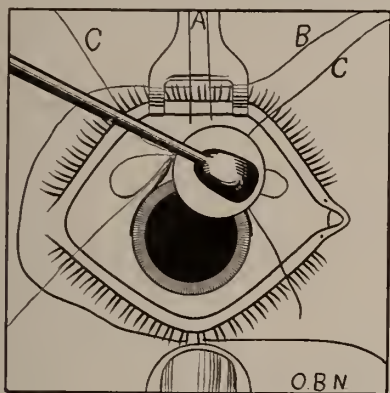


Fig. 14. Lens held by erisaphake used to smooth out cornea and conjunctival flap. (Fisher.)

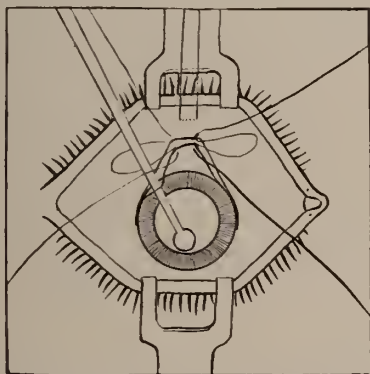


Fig. 15. Using Fisher's small erisaphake to break the zonula. (Fisher.)



Fig. 16. Cross-section showing manner of applying Fisher's erisaphake. (Fisher.)

(Figs. 15 & 16). The lens is then gently raised until the zonula is broken and the lower edge appears over the lower border of the pupil. The vacuum is released by removing the tongue

from the opening in the oral valve and the suction cup removed from the anterior chamber.

The lens is now delivered "after the manner of Knapp, and others, following a technic similar to that of a tumbler so cleverly described and performed by Colonel Smith of London, England, and Dr. Holland and others in India."

The conjunctival sutures are immediately tied, using the cataract utility forceps (Fig. 17) and more conjunctival sutures placed, if

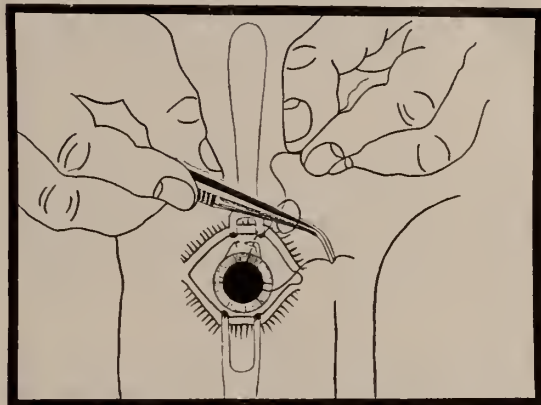


Fig. 17. Tying the sutures with the cataract utility forceps. (Nugent.)



Fig. 18. Dressing after cataract operation. (Barraquer in Fisher's book.)

thought necessary. If the sphincter pupili has not been cut, eserine, $\frac{1}{2}\%$ in ointment, is instilled and the lid sutures tied.

If a complete iridectomy has been performed, atropine 1 per cent. in ointment should be used in place of eserine. The lids are covered with an ointment of yellow oxide of mercury, 1 per cent., and a double eye-patch (Fig. 18) is now applied and held in place by five adhesive strips.

The patient is kept in bed 28 to 30 hours. The

lid suture is removed and the eye operated on dressed in 24 hours but not opened. The eye not operated on is left open. A fresh dressing is applied to the eye operated on every day and the eyeball inspected about the third or fourth day.

If the pupil is quite small, or if pain is present or there is considerable lacrimation or swelling of the lids or conjunctiva, atropine is used at the time of first inspection.

Uncomplicated cases remain in the hospital about two weeks by which time the conjunctival sutures will have come away. If, however, they remain, a 1 per cent. butyn solution is instilled in the conjunctival sac and the sutures are removed.

The digital tension, pupillary reaction and vision without glasses and with glasses are recorded and the patient discharged with instructions to return at regular intervals. Correcting lenses are fitted in about six weeks after the operation.

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DISCUSSION

Dr. George Francis Suker, Chicago: You have seen a very nice demonstration of a cataract operation—as good a showing as the pictures taken by Elschmig. Any cataract operation is done for a purpose, and that is, the result. The choice of operation depends upon your inclination, healing being more or less mechanical. Unless you have some idea of mechanics and the operating of mechanical instruments, you had better not attempt an operation of this kind. Surgery is mechanical, and you have to apply the laws of mechanics to a large extent.

There is no question that the ideal operation is extraction of the lens in capsule. Is the capsule such a bugbear that if you leave some or do not get it out you are going to get a bad result? Not at all. Take a child with congenital cataract. I do not believe Dr. Nugent has ever tried to remove a congenital cataract by this method in a child two or three years of age. We needle them. How often do you get 20/20 vision, and how little trouble do you have, and you nearly always have a round pupil, and more often than not a goodly portion of the capsule remains forever.

Necessarily you have complications in some of these cases as well as in any other cataract operation. You have iritis, iris prolapse and vitreous loss following intracapsular extraction just as you do in any other type of operation. Dr. Nugent brought out a very apt point in regard to removal of the capsule when it bursts and only a part of it comes away with whole lens or some cortex remains. It is not at all difficult to remove this capsule remnant as it usually is lodged in either angle of the incision. Further, in an attempt to deliver the lens you may see something in the angle of the wound. You think it has broken, but if you examine the angle of the wound closely you will see that it is not vitreous, but some of the capsule is caught.

The question arises whether or not all of us should attempt intracapsular extraction with these instruments. We have always heard Dr. Fisher and Dr. Nugent expound intracapsular extraction by this method. It is a good method in their hands. I do not deny that, but would it be good in your hands—that is the question. The old operation with capsulectomy averages just as good visual results, and if not, it is not because of the surgical technic, it is because you have an intraocular lesion around the macular area. Every cataract case, except the traumatic, will show upon close perimetric examination some more or less definite disturbance around the macular area, and if it is pronounced you cannot get 20/20 vision, no matter what operation you do. Therefore it is absolutely necessary to determine whether you have involvement of the macular area, and very often taking the fields of that patient will give you a good idea as to whether the macular area is involved, and particularly the blind spot. If there is this involvement you will not and cannot get 20/20 vision, no matter how perfect an operation—extra or intracapsular.

I have seen Dr. Nugent do this operation. It is an excellent technic. The modification he has made in the Barraquer operation, allowing the force to be ap-

plied by the tip of the tongue is an excellent improvement. It leaves both hands free to act, and in case of accident you are in a position to take care of it much more accurately than if the suction were determined by pressure of the fingers. The anesthesia he describes is the usual technic that should be employed by anyone doing cataract extractions—either the O'Brien or Van Lint. I prefer the Van Lint. It is less dangerous, and I have known of facial paralysis following the O'Brien anesthesia.

The intracapsule operation with capsule forceps (Hult-Elschnig type) is the one I would advocate for every operator. If you deliver the lens in capsule, well and good; if not, you are no worse off. Furthermore, if it should break you remove a much larger portion than by dissection. Furthermore, in attempting to deliver a lens by a capsule forceps, the degree of counter pressure employed is important. When the capsule is grasped, you gently rock the lens several times, and then with a Schwartz hook or a large strabismus hook, you gently press in the direction of the optic nerve from a point about 4 or 5 mm. below the inferior limbus. This pressure, with the gentle upward motion of forceps, causes the lens to tumble. A tumbling lens leaves the upper portion of zonule intact, and prevents vitreous prolapse when the lens is almost "born", then with the hook you can roll it out, still clinging with forceps to capsule. A tumbling lens is the surest way to avoid vitreous prolapse. Should the capsule rupture before complete delivery, you simply proceed as in the usual manner of extra-capsular operation.

I am free to confess that I have never used either the Barraquer or Dr. Nugent's method. I have used the Smith method early in my career, and from then on I have come to the capsule forceps, and though you do break more capsules, the results are about equal. Take it all in all, you are safer doing the capsule forceps operation than doing any of the suction operations—and of the latter, the Nugent method is the safest. It is not a method to be used by the casual cataract operator.

The incision and closure of the wound is also a major portion of the cataract extraction. I believe the section should be made practically scleral in order to get into the vascular tissue. A conjunctival suture is certainly an advantage—one at least, if not more—for it ensures proper wound coaptation and allows earlier removal of the bandage. There is not any doubt whatsoever but that intracapsular extraction, by suction or by forceps, hastens the time of recovery. I think those who try to do an intracapsular extraction whose cataract work is limited, are far safer to do it with iridectomy than without iridectomy. You are operating for a result, not for cosmetic purposes, and if the capsule should happen to break where an iridectomy is performed, it is as good as if the iris were not touched. If you want to do an intracapsular extraction either with this suction apparatus or with forceps, make a small keyhole iris incision. Some irides will not dilate as rapidly nor as extensively as they should. Any iris should dilate 6 to 7 mm. for a comfortable lens delivery, and if it does not, by all means do an iridectomy. If it

dilates to 6 or 7 mm. with a round pupil, do an iridotomy.

Dr. Palmer W. Good, Chicago: I should like to ask how long after the deep orbital injection is made, the operation is started. It is my understanding that the tension drops rapidly and sometimes the tension is not sufficient to make a good incision.

Dr. Samuel J. Meyer, Chicago: I watched Elschnig for two years at his clinic. He was running a series of intracapsular extractions, I think there were 250 Barraquers. He would allow nobody to do a Barraquer except himself. He gave the method up because he learned to do the other method better and thought it safer. At that time they were using the original Barraquer vacuum machine which required four assistants so it was a cumbersome job, and every now and then the vacuum gave out when the lens was being extracted. One should do the operation he can best perform. The Barraquer in certain hands is a beautiful operation. The Elschnig intracapsular with its various modifications is also beautiful.

We have just run a series of 200 cataract operations, 100 intra and 100 extracapsular. These were all private patients where one does an operation in which he expects to get the best result. We had 65 per cent. positives for the intracapsular where the capsule came out with the lens. The big factor we had to contend with was the number of needlings necessary in extracapsular extractions. We all know of the complications that may follow needling. I firmly believe that if an operator does many cataracts he should do the Barraquer or Elschnig intracapsular operation. They make beautiful operations when done with iridotomy or a basal incision with a round pupil.

I would like to ask Dr. Nugent if he puts in a lid suture in each case, and when he first dresses the eye.

Dr. O. B. Nugent, Chicago (closing): I wish to thank all the gentlemen who discussed my paper, and particularly Dr. Suker for his kind remarks. I am very glad that he spoke of the complete iridectomy. That is exceedingly essential in some cases, and I have had complications where I am sure that had I not been so bold as to attempt to deliver the lens through an otherwise small pupil, I would have had better success. Also, I concur with him in the idea that if a complete iridectomy is not done, at least a peripheral iridectomy or an iridotomy should be done. The iridotomy is much easier to do with a scissors, as you saw in the picture, than a peripheral iridectomy. One, I feel is essential.

It is possible to determine previous to operation whether you want to do a complete iridectomy or not. A slitlamp examination of the lens is extremely valuable where it is discovered by slitlamp examination that you have a tense capsule you can be guided accordingly, or if you are sure the capsule is weak it is better to do a complete iridectomy. Where the slitlamp reveals the quadrant on the posterior capsule, you can assume that it is a fairly tough capsule, and even with a small pupil you will be able to deliver it without trouble.

Dr. Good asked how long after the deep orbital in-

jection is made you ought to operate. If I were doing a forceps operation or a Smith operation, I would want to make my injection almost immediately to have the ocular tension necessary to make delivery. But with pneumatic forceps it is not so essential to have high tension or normal tension.

Dr. Meyer asked about the lid suture. I always use them.

CLINICOPATHOLOGIC AND THERAPEUTIC ASPECTS OF THYROID CARCINOMA*

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In the routine study and management of goiter cases there are no particular problems that arise that cannot be dealt with by the trained general surgeon. There was a time when these conditions were the sole province of the so-called goiter specialist but accurate and dependable knowledge has been so well disseminated that a man of good general surgical experience can readily acquire the knowledge and dexterity peculiar to these cases.

Much work has been done in dysfunctions of the thyroid gland and their study, and the results of treatment have been brought to a high order of excellency notwithstanding the fact that all problems have by no means been solved. In problems of malignancy of the thyroid gland, considerably less interest has been manifested for obvious reasons. One is the relatively smaller incidence and another is the disappointing results obtained in treatment. Progress, however, must lie in continued interest and study and it is the opinion of the most informed investigators that such progress will lie in closer correlation between pathologic findings and clinical observations.

The study of the thyroid gland in general presents phases that make it distinctive and in the field of malignancy it is no exception to the rule. Various observations of men the world over, have led to widely varying views which have been somewhat responsible for the chaotic state of the subject. This has given rise to the rather general belief that the behavior of malignancy of the thyroid gland was different from malignancy of other organs and has given investigation a sense of futility. A review of the literature, however, will compel

the conviction that investigators have paid closer attention to the findings of others, have made a more careful correlation of their data and one cannot fail to see more and more light reflected in each succeeding article.

It has been believed that a normal thyroid gland may give rise to metastases that show normal thyroid structure or malignant structure; that a malignant thyroid gland may give metastases that are benign or malignant; that a benign lesion of the thyroid may give metastases that are benign or malignant. Von Eiselsberg has stated that he has found a metastatic thyroid tumor functioning physiologically in a case where the original thyroid had been entirely removed by successive operations for malignancy, whereas at present we adhere to the view that the cancer cell has lost physiological powers, and functions only morphologically.

Great names have been associated with these conflicting views among them Cohnheim, Kraske, Theodore Kocher and others. Much work has been necessary to bring the subject out of its maze of confusion and the greatest credit goes to men like Graham of Cleveland, Simpson of Ann Arbor, Aschoff, Wegelin, Bérard, Williamson, Pearse, Tebbutt and Dunhill.

With reference to normal thyroid or benign lesions causing metastases, Boyd in his "Surgical Pathology" says, "It appears safe to say that such a condition only exists in the imagination. Many cases have been reported at once after the removal of the secondary growth, whereas if the author had waited one to two years, carcinoma of the thyroid gland would have developed (i. e., would have been clinically recognizable). Still in undoubted cases of thyroid carcinoma, the metastases often show the appearance of normal thyroid tissue, what the French call 'the return toward the normal'."

The difficulty has been in determining when a growth passes from a benign condition to malignancy. In a gland like the thyroid, given to active hyperplastic changes of diverse types of structure it is particularly difficult to see the gradation toward malignancy as the character or arrangement of the cells may show little change. Such glands may be malignant even before the pathologists can be positive.

In an article by Dunhill of London, all carcinomas (of which twenty types have been de-

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scribed by some writers) are classified under three general groups:

1. Scirrhus carcinoma
2. Papilliferous adenocarcinoma
3. Malignant adenoma

Scirrhus Carcinoma. The first comprehensive description of this rather rare condition by Billroth in 1888 is still a standard. This type presents the same characteristics as scirrhus elsewhere. It begins by the epithelium breaking through the basement membrane of the acini and gives rise to a small, very hard, fibrous, unencapsulated tumor that destroys the affected thyroid. It invades locally and becomes adherent and immovable. It spreads to the adjacent lymph glands. It must be distinguished from chronic thyroiditis or "woody" thyroid (Riedel struma type) and from spindle-cell sarcoma. On section, it is uniform in structure and consistency. Microscopically, it shows fibrous tissue considerably in excess of the cellular elements which may appear in the form of small masses, cords or strands. It is often associated with adenoma but does not invade blood vessels; hence distant metastases are rare.

Papilliferous Adenocarcinoma. When the thyroid tumor shows papilliferous change grossly and microscopically, with cyst formation, it is classified as of this type of cancer. When papilliferous change is evident microscopically, but not grossly, it is a malignant adenoma. The papilliferous adenocarcinoma may originate in a previous adenoma or apart from adenoma. Its origin from the former is most numerous in goitrous regions, while its origin from the latter obtains in goiter-free areas. Papilliferous structure peculiar to this type of thyroid carcinoma also occurs in:

- a) Lateral aberrant thyroids
- b) Adolescent goiter
- c) Benign papilloma

It is an epithelial hyperplastic response to some stimulation whether physiological or pathological. Dunhill believes that malignancy may arise as a result of stimulation of a gland or portion of a gland, the cells of which are sub-efficient through maldevelopment. This opinion is all the more interesting in view of the recent publication of Crile's belief that a cancer cell is a cell of low potential, of de-

creased dynamic power and capable of reproductive but not functional growth. Papilliferous adenocarcinoma may merely be a further progressive change leading to invasion of capsule and of lymphatics.

Lateral Aberrant Thyroids. These form an unusual and interesting study because of their rarity. In the last reports only about forty-five to fifty cases have been collected from the literature. These aberrant thyroids consist of a chain of nodules placed laterally from the thyroid gland in the anterior and posterior triangles of the neck. They possess thyroid structure, are encapsulated, but have no connection with the thyroid gland. They originate from the pharyngeal entoderm and result from failure to join the median thyroid gland. This is accompanied by an imperfect development in structure. It has been noted by all investigators that cystic papilliferous change always occurs in these aberrant thyroids and it has been stressed that there is a strong tendency for this to undergo malignant change. Metastases may be set up from these aberrant thyroids. Apparently, the epithelial hyperplasia resulting from the stimulation of ordinary physiological demands elicits a response from these imperfectly developed or sub-efficient cells that deviates from the normal. Most of these lateral aberrant thyroids become recognizable clinically before the ages of twenty or thirty.

Malignant Adenoma. This is the most significant group as 85 to 90% of all thyroid carcinomas are of this type. Into this category have now been placed the various types of carcinoma that have previously been masquerading under the names of medullary carcinoma, solid cancer, cellular cancer, cubical-celled carcinoma, carcinoma simplex, colloid cancer, benign metastasizing adenoma, etc. It seems to have been sufficiently proven that these represent transition stages from the original adenoma in various states of advancement or degeneration and it is also a fact that the histological picture may show many of these stages in different parts of the same specimen.

Graham and Reimann believe (and they are supported by many others) that malignant adenoma arises in a pre-existing so-called "fetal adenoma." The latter forms a true encapsulated tumor in the thyroid gland and develops, according to Aschoff, not from fetal rests but

from the proliferation of adult cells as a result of some form of stimulation or irritation. The tissue is often more embryonic in appearance and accounts for the name. This proliferation of epithelium occasionally passes beyond benignity to malignancy. Pemberton states that this occurs in 2.7% of nodular goiters, although in goitrous regions, as in Switzerland, as high as 8% have been reported. So many varieties of structure may appear in a benign adenoma that Wegelin, Graham, Dunhill and others assert that even in the hands of experts it may be impossible to deny or affirm the presence of

of the blood vessels at an early stage while the tumor is still encapsulated. Hence distant metastases, e. g. to the lungs or bones, may occur early and from very small parent growths. There is no invasion of the lymph glands as in scirrhus and in papilliferous adenocarcinoma, until the growth has penetrated its capsule. The secondary growths may appear like the apparently benign primary adenoma.

Mr. C. A. Joll in 1923 collected 44 cases from available reports of secondary metastases to bone from suspected thyroid carcinoma in which either the deposit or the primary thy-



Fig. 1. (x 60) Microphotograph from a case of malignant adenoma, showing invasion of malignant cells into a blood vessel, accounting for distant metastases.

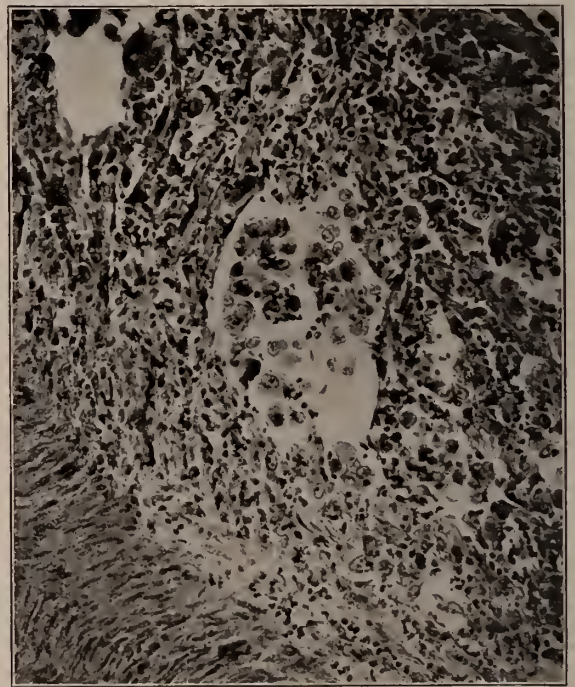


Fig. 2. Microphotograph (x 120) of a case of malignant adenoma, showing the breaking through of cancer cells into a lymphatic vessel.

malignancy. Hertzler strongly confirms the belief that fetal adenomas are the precursors of malignancy and states that the development of carcinoma in a bosselated colloid or ordinary adenoma is exceedingly rare. He further states that "the more closely malignant tumors are studied, the more commonly is evidence of fetal adenoma found." Malignant adenoma will invade its capsule but it may already be malignant before the capsule is penetrated. It is characterized by its great tendency to invasion

of the blood vessels at an early stage while the tumor is still encapsulated. Hence distant metastases, e. g. to the lungs or bones, may occur early and from very small parent growths. There is no invasion of the lymph glands as in scirrhus and in papilliferous adenocarcinoma, until the growth has penetrated its capsule. The secondary growths may appear like the apparently benign primary adenoma.

From the growths and microscopic pictures he presents the following seemingly permissible data:

1. The thyroid gland may be quite normal in every way and the metastasis may have either the structure of normal thyroid tissue, of an innocent thyroid tumor or of a tumor exhibiting any degree of malignancy.

2. The thyroid gland may be the seat of an innocent diffuse goiter or of an encapsulated innocent tumor and the bone tumor may have a similar structure. On the other hand, the

metastatic tumor may show various grades of malignancy.

3. The tumor of the thyroid may be of any grade of malignancy, yet the metastatic growths in bones may have the structure of an innocent goiter."

That he is not fully in accord with the above is evident in another section of his paper where he points out important omissions in many of the reports such as failure to remove and examine the primary tumor by operation or at autopsy, and of clinical interpretation rather than interpretation from a histopathologic standpoint.

Graham emphasizes that even microscopic appearance may be inconclusive but that the percentage of error in diagnosis will be reduced materially if a more thorough study of systematic serial sections be undertaken. Many cases would be discovered as malignant which otherwise would have been considered benign. His rule for recognition for malignant adenoma is: If the tumor is not grossly and microscopically papillomatous and if it is not grossly and microscopically scirrhous carcinoma, then it is malignant adenoma. He stresses gross and microscopic erosion of the blood vessels.

Diagnosis. By the time the usual clinical diagnosis of carcinoma is clear, the condition is too far advanced to permit of effective treatment. Since a carcinoma arises almost always from a thyroid gland already pathologic, it behooves us to cast a suspicious eye on every adenoma that presents itself. Carcinoma occurs in the majority of cases between the ages of thirty and fifty years. But no age is exempt.

The presence of one or more of the following symptoms and signs in a goiter should excite the suspicion of malignancy, as only in this way can we hope to discover the early cases:

- Recent rapid growth of an old adenomatous goiter
- Hoarseness
- Paralysis of a vocal cord
- Hard consistency of the thyroid gland
- Recent marked loss of weight and strength
- The presence of an apparently harmless hard nodule in the neck of the young man or woman
- Fixation of growth
- Difficult respiration from pressure on the trachea
- Difficult deglutition due to attachment to the esophagus, not necessarily associated with obstruction
- The clinical recognition of involved lymph nodes

means an unencapsulated malignant tumor or a penetration through the capsule in a malignant adenoma.

Treatment. The question of prognosis from the point of view of treatment depends entirely upon whether we are dealing with a late case or with an early one. The late case, or one in which clinical recognition is clear, offers practically no hope of cure although some patients may have their lives prolonged by treatment. Opinion is divided as to whether surgery is indicated in these cases but observers like Bland-Sutton, Perthes, Balfour, De-Courey, Crotti and A. Kocher feel that it is not. Their opinion is based on the necessity of doing a total thyroidectomy and parathyroidectomy for the complete eradication of the advanced malignancy and this is not consistent with the maintenance of life. In consequence, the tendency is to subject these conditions to vigorous irradiation as a palliative measure.

All are agreed, however, that surgery holds forth its best prospects in those cases of nodular goiter in which carcinoma was accidentally discovered by pathologic examination, especially if the operation is followed by a systematic course of x-ray therapy.

In cancer of the thyroid gland in particular has roentgentherapy gained warm and enthusiastic advocates. It has been found that for some unknown reason cancer of the thyroid gland is more radiosensitive than carcinoma elsewhere. The tumor rapidly becomes softer and smaller under treatment. The primary neoplasm is more responsive than the metastases. Schaedel cites a case of favorable response in a lung metastasis and in a brain metastasis. The value of irradiation as an adjunct to surgery has drawn adherents from the ranks of the surgeons as well as roentgenologists and it is a matter of great satisfaction that cooperation between the pathologist, the surgeon and the roentgenologist has made it possible to view the prognosis in these early cases in a more cheerful light. Among those who come forward in this attitude are Schaedel, Perthes, Jüngling, Holfelder, Holzknecht, Klose and Helwig, Sudeck, Pfahler, Crile, Pemberton, Crotti, Craver and Dunhill. Some of these men have cases on record in which life was prolonged for many years.

A word with regard to surgical technic may not be amiss. Nothing new is offered but it

is our desire to call attention to two factors in the technic that we have found very valuable in our work. I refer to the use of the rubber tourniquet of Bartlett and of the electro-surgical knife in the resection of the thyroid gland. In no field of surgery do these accessories give more satisfaction than in malignancy of the thyroid gland. There are very few cases in thyroid surgery in which these procedures are not applicable. They eliminate the use of innumerable forceps, create practically a bloodless field, permit the surgeon to remove a larger portion of the gland than is ordinarily possible, and the electrodesiccating

when the subject was not as clearly understood as it is at present and omissions no doubt were made in treatment that would not now obtain.

Case 1. A married man, aged 54 years, complained of lack of energy, off and on, for the past twenty years. This compelled him to leave the farm seventeen years ago because he found the work too hard. He used to ache all over. The history of a goiter is incomplete but he began to notice an alternate stiffness of either side of his neck about three to four months before his appearance at the Clinic. At that time he was told that his thyroid gland was enlarged.

Physical examination disclosed a central enlargement of the thyroid gland, markedly hard to palpation. The patient appeared to be lethargic as in hypothyroidism. The basal metabolic rate was plus seven. At operation

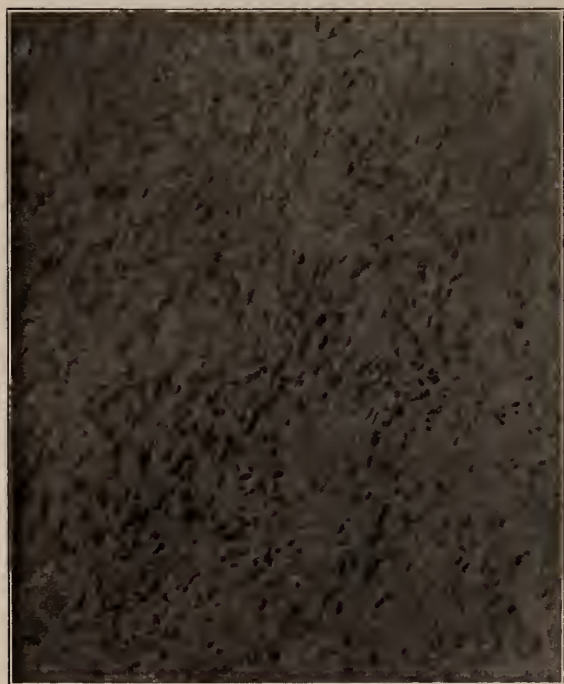


Fig. 3. Case 1—Microphotograph ($\times 120$) showing typical appearance of scirrhous carcinoma with a preponderance of fibroblastic elements over the epithelial elements.

effect of the electrosurgical knife effectively seals the fine blood vessels and the lymphatics thus preventing the accidental spread of cancer cells always possible under usual surgical methods.

CLINICAL CASES

In presenting the following case histories, the apparent hopelessness of securing results in the late cases will be clearly manifest. Their value will lie in drawing us to the inevitable conclusion that cancer of the thyroid must be found early if we are to expect any results from treatment. Some of these cases were treated at a time



Fig. 4. Case 1—Higher magnification, showing more clearly the fibroblasts and the epithelial tumor cells.

the tumor did not appear to resemble the usual thyroid tissue. It seemed to consist of a hard semicartilaginous wall of tissue with considerable caseous debris in the center, apparently the result of degeneration. No palpable glands were found in the neck. On section most of the thyroid tissue was destroyed by an invasive scirrhous cancer. Microscopically, a typical scirrhous carcinoma was found and characterized by the presence of isolated columns or strands of tumor cells separated by the presence of an excess amount of connective tissue. In some sections of the slide, there was a feeble attempt to reproduce follicular structure but the follicles were atypical and poorly differentiated.

The patient progressed very nicely but on the fifth

day, he suddenly developed choking spells and died, presumably of edema of the glottis.

Postmortem examination revealed what appeared to be hard metastatic nodules in the thigh and leg, one in the abdomen and one below the right costovertebral angle.

Case 2. A married woman, aged 55 years, first developed a swelling of the right lobe of the thyroid gland at the age of 13 or 14 years which gave no discomfort. During the previous 10 years, a swelling appeared on the anterior surface of the thyroid which gradually grew larger; of late years a swelling of the left lobe had developed. She had been undergoing medical treatment for years and last year had x-ray treatment for the enlargement. Apart from occasional rapid pulse and the disfigurement, she stated that she had no trouble until one month before her appearance at the Clinic. Since then she had had a choking sensation accompanied by an ache in the neck and she had difficulty in swallowing. Her appetite was good, although better in former times. She had lost about twenty-five pounds in the last two years but had regained some weight lately. She was constipated at times.

Physical examination revealed a greatly enlarged tense thyroid gland, the enlargement involving both lobes and the isthmus. The latter was the size of a small orange. At operation, multiple large tumors of the thyroid gland were found and in the left lobe which, according to the history, had taken on the most recent active growth, a hard mass was found surrounded by a firm capsule, the interior forming a hemorrhagic cystic cavity. Gross examination showed adenomata in the right lobe and isthmus apparently benign. Section of the removed portion of the left lobe disclosed an encapsulated adenoma enclosing tissue which seemed exceptionally hard with a hemorrhagic space in the center. At one point, the capsule was penetrated by this same hard tissue. This specimen cut with definitely more resistance than the benign portion of the thyroid gland. Microscopically, the picture was that of solid compact masses of large vesicular nucleated cells showing no inclination to acinar formation. These masses are separated from one another by narrow strands of connective tissue infiltrated by inflammatory cells. Throughout the section, invasion of tumor cells into the blood vessels and lymphatics could be seen.

Diagnosis. Malignant adenoma originating in a fetal adenoma.

Progress. Although bleeding seemed satisfactorily controlled at the operation, the patient had rather an alarming hemorrhage about fifteen hours after the operation. This was well under control within the next twenty-four hours without the necessity of reopening the incision. Further convalescence seemed uneventful until the tenth day when the patient called attention to a gradually increasing difficulty in swallowing. This difficulty increased so as to prevent her from ingesting sufficient nourishment. Accordingly, a Reh-fuss tube was introduced into the stomach and for the next eighteen days the patient was fed through this tube. During this period it was noted that the thyroid

gland was enlarging quite noticeably so as to form a visible tumor. The tube became completely blocked at this time and removal was necessary. During withdrawal, it was noted that there was marked resistance in the passage of the metal bulb through the upper part of the esophagus. Undoubtedly, the malignancy of the thyroid gland had caused marked constriction of the esophagus. The tube could not be re-introduced and as the patient proved unable to swallow, and rectal feeding was unsatisfactory, a gastrostomy was done under local anesthesia two days later to prevent the patient from starving to death. In her weakened condition, the patient proved unable to cope with the slight shock incident to the operation and died shortly after. An autopsy was not obtainable so that it was

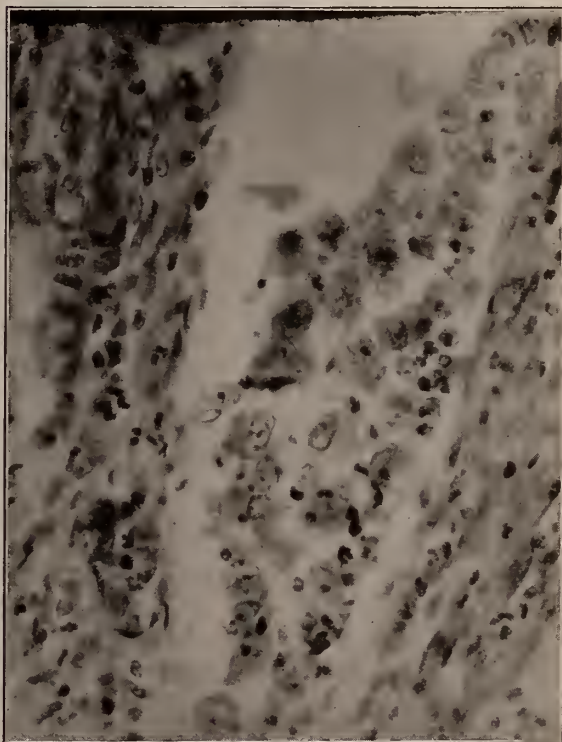


Fig. 5. Case 2—Higher power ($\times 300$) showing cancer cells within the lumen of a blood vessel.

impossible to determine the presence or absence of distant metastases. The probability is that these were present on account of the invasion of the blood vessels in the microscopic picture.

Case 3. A married woman, aged 61 years, came in complaining of pain in the right side of her neck radiating down into her chest. This started about four months before, was intermittent at first, but present more frequently of late. The pain had no other radiation and had no relation to movements of the neck. About six months before, the patient developed hoarseness and a cough and thought she had a "cold." This condition became worse. At first she had infrequent exacerbations but of late she had been bothered constantly. The cough was non-productive and there had

been no hemoptysis. She felt that an irritation in her throat made her cough. For the past three months she had noticed a difficulty in swallowing and in breathing. She had lost ten pounds in weight and considerably in strength. She stated she was paler than formerly. She had not been aware of the presence of a goiter.

Physical examination gave rise to the following significant findings:

1. The left lobe of the thyroid gland could be felt rising from a substernal position during deglutition. It felt hard and somewhat irregular.
2. A chain of gland-like bodies could be felt along the posterior border of the right sternomastoid muscle along the lower half of its extent. The uppermost, about the size of an almond nut, seemed easily movable and elastic in consistency. At the lower attach-

A clinical diagnosis was made of carcinoma of the thyroid gland with secondary deposits in the glands and in the lung. The uppermost gland behind the sternomastoid was removed for pathologic examination. The report from the National Pathological Laboratories read as follows:

"The specimen is a red fleshy mass which on cross section presents a lobulated opaque surface and a distinct and intact capsule.

"The microscopic sections show a thin, intact fibrous capsule which encloses several cystic spaces of varying size. These spaces are lined with polygonal cells with large vesicular nuclei. These cells form an irregularly follicular and papillary arrangement on the inside of the spaces which are filled with granular material, degenerated red corpuscles and other cells. Between



Fig. 6. Roentgenogram of chest showing large mass in the right upper lung field.

ment of the muscle, above and passing behind the right sternoclavicular joint, a hard irregular mass could be felt, apparently in line with the chain of gland-like structures behind the sternomastoid muscle.

3. X-ray examination of the lungs revealed a large shadow, smooth in outline, along the right border of the heart from the second anterior rib to the third intercostal space extending about two inches lateral to the heart border. This shadow did not pulsate when viewed fluoroscopically. No other parenchymatous shadows were visible in the roentgenogram. Fluoroscopic examination of all the bones showed no metastatic lesions in the bones.
4. A paralysis of the left vocal cord was found.

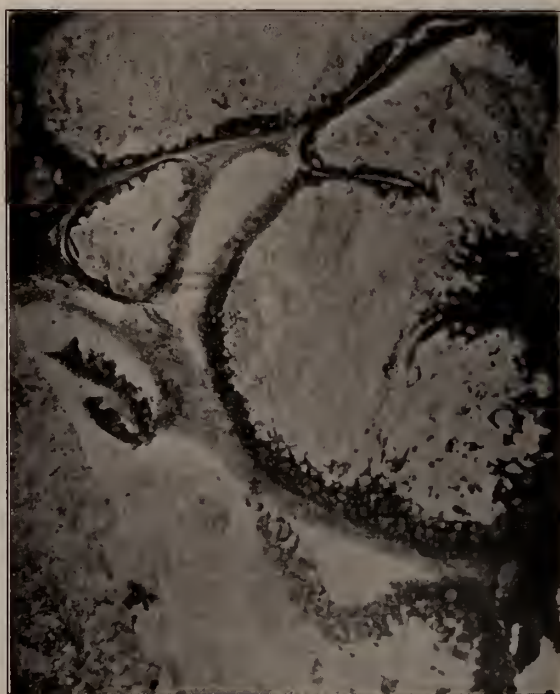


Fig. 7. Case 3—Microphotograph (x 24), showing cystic adenomatous structure of lateral thyroid body.

the cystic spaces and the capsule the fibrous tissue is infiltrated with round and lymphoid cells. There is no typical lymphadenoid tissue in the specimen. The appearances indicate cystic adenomatous goiter in an accessory thyroid or possibly metastatic. There is no evidence of malignancy in the specimen submitted."

Because of the distressing dyspnea the patient was having from obvious compression of the trachea, it was decided to do a decompression operation of the thyroid gland as a palliative measure for relief of pressure. At the operation, after the ribbon muscles were divided, the left lobe of the thyroid lent itself so readily to mobilization and removal that the latter was done in the hope that by so doing, more lasting relief of the tracheal compression would be obtained. The whole lobe was

removed with the electrosurgical knife so that only a thin layer of the thyroid capsule in relation to the side of the trachea was left. The left lobe was found to be partly substernal and very hard in consistency. The right lobe appeared practically normal but a hard mass could be felt lateral to the lobe along the lower part of the carotid sheath. Removal of this mass was not attempted nor was its removal considered desirable.

Pathologic report: "The specimen consists of a mass of tissue 5 x 2.5 x 2 cm., composed for the most part, of an adenoma-like mass, with a thick fibrous wall and opaque yellow areas and areas of hemorrhage. The microscopic sections show no signs of malignancy. They do show more or less normal thyroid tissue with large foci of lymphoid tissue and a goitrous cyst wall lined incompletely with cells that form a low, irregu-

Illinois, reported that she was in the hospital under his care. We are indebted to Dr. Kirby for the information that follows:

"The patient developed a dizziness followed by severe pain on the top of her head which remained constant and prevented her from sitting up. Coincidentally, vomiting developed which became projectile and remained so. At the same time, considerable weakness of the right arm and some weakness of the right leg was noted. Ophthalmoscopic examination showed apparently negative findings. A roentgenogram of the chest showed essentially the same shadow observed at the original examination. The patient rapidly declined and died two weeks later apparently from a metastatic tumor of the brain. Unfortunately, no autopsy was obtainable."



Fig. 8. Case 3—(x 60) Another field from same tissue showing typical follicular thyroid structure.

lar papillary arrangement." A subsequent report gave the same findings but the statement was made that the microscopic appearance of malignancy was frequently unreliable and that carcinoma could not be ruled out.

Following the operation the patient declared that she could breathe easier and that her voice felt stronger. On the assumption that we were dealing with advanced malignancy, a course of roentgen-radiation therapy was advised and undertaken. She received a series of twelve treatments to the neck and chest over a period of twenty-four days and left the hospital with instructions to return for another series within six weeks.

About one month later Dr. Kirby of Spring Valley,



Fig. 9. Case 3—Excised left lobe consisting of an adenoma-like mass with a thick fibrous wall and areas of degeneration and hemorrhage.

The absence of complete data such as an autopsy would have revealed, renders the correct interpretation of this case somewhat difficult. We are confronted by three problems:

1. Is the primary lesion in the lungs and are the hard masses along the carotid sheath and behind the sternomastoid muscle secondary, along with the metastasis to the brain?
2. Are the structures behind the sternomastoid muscle and along the carotid sheath of aberrant thyroid nature, and do they represent a primary carcinomatous condition?
3. Is the microscopically benign fetal adenoma of the

thyroid gland really a primary malignant condition, with secondary deposits in the lung, in the posterior triangle of the neck and in the brain?

It is conceivable that the brain metastasis may originate from a primary tumor of the lungs, but the clinically malignant structures behind the sternomastoid muscle and in relation to the carotid sheath would form a very unusual location for metastases from the lung and their presence in close relation to structures of obvious thyroid nature would seem more than a coincidence. The resemblance of the histological picture of the nodule removed from the posterior triangle to the type of structure found in the adenoma of the thyroid gland is rather significant of spread to the lymph glands although little lymphoid structure was found in the specimen examined. Assuming for the purposes of argument, that we are dealing with a benign lesion of the thyroid gland and with the primary existence of aberrant thyroid, the obvious malignant characteristics of the masses behind the sternomastoid muscle and in relation to the carotid sheath, strongly suggest primary



Fig. 10. Case 3—Roentgenogram of chest of the patient just before death demonstrating no perceptible change after radiotherapy.

carcinoma of these misplaced thyroid structures, as the propensity of these structures to malignant papilliferous change is well known. In such case, the lung and brain deposits would represent secondary spread.

It would probably be impossible to state with accuracy whether we are dealing with a primary carcinoma of the thyroid gland or with a primary carcinoma of lateral aberrant thyroids, but for the purposes of this paper a diagnosis of cancer of thyroid origin would appear to be tenable. Without being particularly hopeful as to the result, I induced Dr. Milton Bohrod, Peoria pathologist, to re-examine the remaining thyroid specimen (which looked like a typical fetal adenoma undergoing degeneration) from the standpoint of a study of systematic serial sections. Dr. Bohrod was able to find evidences in the capsule of the microscopic appearance of malignancy, thus completing the case from the clinicopathologic aspect.

His report follows:

"The nodule is made up of softened necrotic material enclosed within a thick very firm white capsule.

"The necrotic nodule is made up of granular material in which shadows of large cells may be seen. On the periphery, attached to the lining wall, are small groups of large polyhedral cells arranged as columns extending into the necrotic material.

"Most of the remainder of the tissue is made up of large thyroid alveoli lined by flattened cells and filled with colloid. In a few places, however, the arrangement of the alveoli is irregular, they are small, some of them have no colloid, and finally, single cells or small nests of cells lie in the connective tissue. In other places the cells are very large, pale, acidophilic, lie in solid irregular islands. Mitoses are few.

"Diagnosis: 'Malignant Adenoma' of the Thyroid."

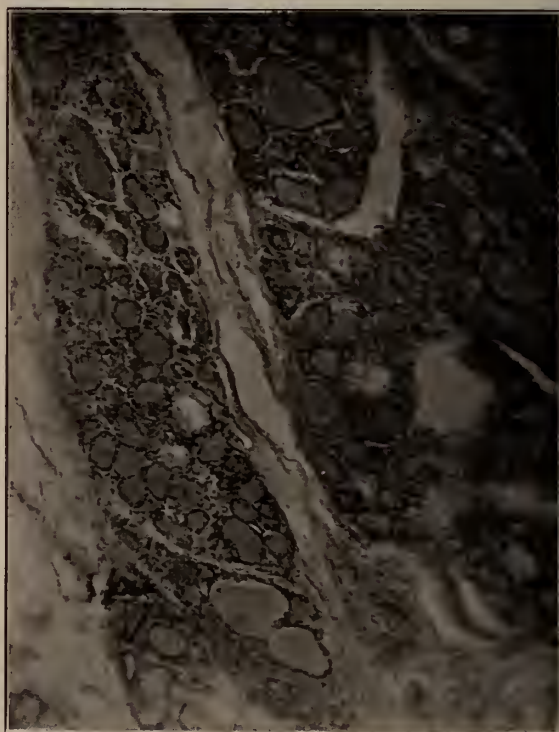


Fig. 11. Case 3—Low power (x 60) Microphotograph of one section of the left lobe showing normal thyroid structure with no suggestion of malignancy.

Comments. From a consideration of the pathology, the treatment and the presentation of clinical cases, we are driven to the inevitable conclusion that we must seek other means of attack than that of direct treatment of clinically recognizable cases of thyroid carcinoma. The results prove only too tragically the almost hopeless prognosis that must attend the treatment of these cases. With the overwhelming evidence at hand, we must turn to prophylaxis as our chief mainstay. Although a larger pro-

portion of cases will be viewed in a more hopeful light by the accidental discovery of carcinoma through the performance of routine serial sections, important progress will never be realized unless we direct our attention to the precursors of thyroid malignancy. As 85 to 90% of all carcinomas arise in preexisting adenomas, it should be the duty of the physician or general surgeon to make this perfectly clear to patients with nodular goiters so that the future advent of malignancy may be "nipped in the bud" by thyroidectomy. The fact that 70 to 80% of nodular goiters eventually become toxic should act as a further

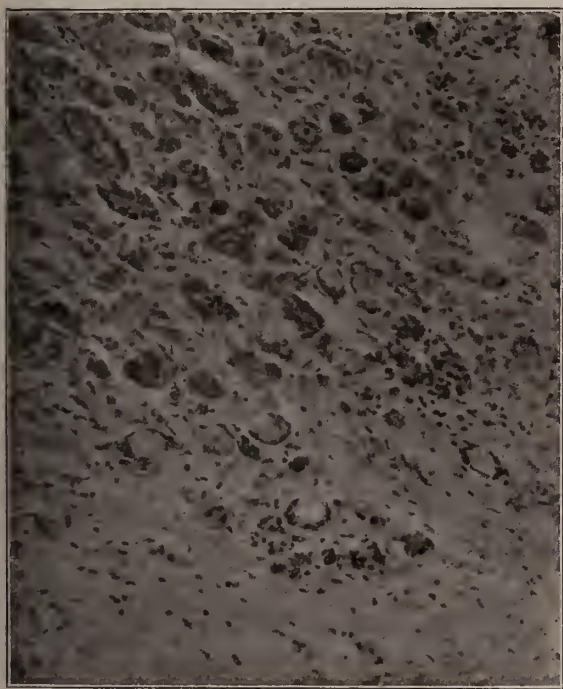


Fig. 12. Case 3—Another field in the same specimen showing entirely different structure. Incomplete and deformed acini, solid masses of cells, small cell nests and single epithelial cells in the connective tissue stroma, with no attempt at regular formation, indicate definitely the presence of malignancy.

argument in favor of thyroidectomy. Although this will not prevent all cases from developing malignancy at a future date, nor will all patients consent to operation under the force of these arguments, yet will such an argument on the part of the members of the profession in conjunction with the coincident education of the laity, be productive of much value in dealing with this dread malady.

CONCLUSIONS

1. Past opinions are reviewed and a consideration of the structural factors peculiar to the thyroid gland in the evaluation of the problem is discussed.

2. All types of carcinoma are classified under scirrhus cancer, papilliferous adenocarcinoma and adenoma malignum.

3. Lateral aberrant thyroids, although comparatively rare show a strong tendency to carcinomatous change usually of the type of papilliferous adenocarcinoma.

4. Eighty-five to 90% of all carcinomas of the thyroid gland arise from pre-existing fetal adenomas.

5. The incidence of thyroid malignancy in nodular goiters varies from 2.7 to 8%.

6. Diagnostic criteria of malignancy are reviewed and presented.

7. Treatment of the early cases should consist of thyroidectomy followed by roentgen irradiation; surgery in the late cases is impracticable and treatment should be confined to irradiation as a palliative measure. The best results are obtained in those cases in which carcinoma is only discovered after systematic serial sections.

8. In the surgery of thyroid malignancy, the use of Bartlett's rubber tourniquet and of the electrosurgical knife have been found valuable.

9. Several case histories are presented.

10. The prophylactic removal of nodular goiters is the most effective weapon we have against carcinoma of the thyroid gland.

I wish to acknowledge my indebtedness to Mr. Harry Biehl, a member of the Peoria Academy of Science, for his invaluable assistance in the preparation of the microphotographs.

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DISCUSSION

Dr. Carl Black, Jacksonville: Mr. Chairman and Members of the Illinois State Medical Society:

It is needless to say that I enjoyed and was greatly profited, as you all have been, by Doctor Bellas' excellent paper. The study of these special problems is leading to progress in understanding the cancer problem in general. The reaction of each tissue or organ is somewhat different and these differences bring us new light. I liked Doctor Bellas' very fair handling of the question of clinical diagnosis for we must remember that the early diagnosis of cancer in any situation is more rarely made than it should be and his analysis of the signs and symptoms which should put us on guard is really most important.

He is to be congratulated on adopting a simple classification couched in terms which we can all understand. Too frequently those working in special fields are prone to coin new terms and to think they see new types of malignancy.

There are only a few basic tissues in the body and these cancer weeds growing wild in the tissue field always partake in some degree of the characteristics of those cells which they are invading and displacing.

The general surgeon will see so few cancers of the thyroid that he may forget its existence altogether if he does not rigidly adopt the rule of having all thyroids removed, sectioned. This is especially true of the adenomata which form 72% of the thyroid group. Papillary carcinoma forms only about 10%, carcinoma-sarcoma 4% and sarcomata 10% (Crile). When we remember that a clinical diagnosis is only made in about one-half of the cases by the best clinicians we see that the average general surgeon may not find much to excite his interest. One lesson we should all learn is to look with suspicion on all adenomata of the thyroid as the fetal adenomata form the basis for about 90% of the whole group.

We should all remember that cancer is cancer wherever situated. The problem is much the same wherever the growth is located. It is up to somebody to simplify the nomenclature of cancer pathology so that we can understand each other. Clinicians, pathologists and specialists have multiplied names until we are all more or less bewildered. The paper of Doctor Bellas does well in adopting a simple nomenclature and I have no doubt such a nomenclature is equally applicable to all body tissues. The same may be said of early clinical diagnosis. It is always made on suspicion—that is by taking notice of all the little clinical signs which are the preliminary stages of fully developed cancer. When we make it our rule to thoroughly excise all new growths and have them carefully sectioned we will begin to make real inroads on the incidence of fully developed cancer. Doctor Bellas' paper stands firmly on the grounds and is a valuable construction to our study of the cancer question.

J. E. Bellas (closing the discussion): There is really nothing I can add to emphasize the points I have tried to bring out in my paper. Dr. Black concurs

so much with the opinions which I have stated in my paper that it is really not necessary to discuss it further.

To re-emphasize the points I tried to stress and which Dr. Black brought forth, it is important to have a systematic study of the routine serial sections in cases of thyroid whether suspected of carcinoma or not. Secondly, it is important to direct our attention to the precursors of thyroid cancer. We must direct our attention to these adenomas which hold forth a liability of incidence anywhere between 2.7 to 8% in the development of carcinoma. Unless we do that, I am afraid that our results will show that there will be little curbing of the incidence of malignancy.

THE TREATMENT OF PEPTIC ULCER WITH POWDERED OKRA*

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AND H. NECHELES, M.D., Ph.D.

From the Stomach Study Group, Michael Reese Hospital and
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Morris Institute.

CHICAGO

The use of mucilaginous plants in the treatment of gastro-intestinal disorders has been mentioned in various clinical reports. In 1911 Mathieu,¹ in an article on the use of mucilaginous laxatives for the treatment of chronic constipation noted some irritating effects and following his suggestion his assistant Taliandier isolated a mucin like substance from agar (*fucus spinosus* Java) which produced favorable results not only in constipation but also in peptic ulcer. Mathieu states: "In cases of gastric ulcer, accompanied by constipation this substance has produced excellent results. It even seems to have a soothing action on stomach pains."

Recently Jones, Ivy and Atkinson² published a report on the use of okrin, a vegetable mucin isolated from the okra-pod, in the treatment of gastric ulcer. These observers also recorded favorable results in three cases. Our interest in this subject was aroused by the story of a colleague, who in conversation reported the apparent improvement of a patient, complaining of mucous colitis, by the use of large quantities of canned okra and okra soups. This observation, together with the above reports led us to investigate the subject of okra. (*Abelmoschus esculentus*). Instead of using the vegetable in its fresh or canned form, or as an isolated vegetable mucin, we thought that the dry finely

ground powder would be as suitable. Through the courtesy and cooperation of the Bio-Vegetin Company, we secured a dried dehydrated okra powder. The present report deals with our studies of this powder, its physical properties and physiological effects, and the results of our clinical experience in the treatment of peptic ulcer.

Physical Properties. The powder is light yellow green in color and not unpleasant in odor and taste. With water it swells immediately and yields a thick mucilaginous viscid solution. In 5% solution it is extremely viscid, and below 2.5% the viscosity decreases considerably. The watery solution has no appreciable acid or alkali.

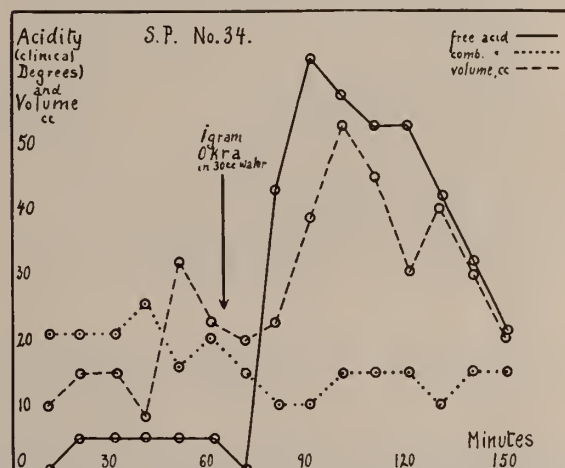


Chart 1. Gastric Secretion after Okra, given by stomach tube.

line combining power. Its reaction approaches neutrality, the solution being only slightly acid to litmus. A 1.65% solution in N/10 and N/20 HCl is less viscid than a solution of the same strength in water (Viscosimetric determination). As this powder formed such a highly mucilaginous solution in both water and acid, we considered its use in a capsule and tablet form as being suitable for our purpose. The powder itself when taken with water adheres to the gums and is not easily swallowed. The idea of chewing a compressed tablet followed later in the course of our observation. Since the tablets are not easily disintegrated in water, the routine procedure adopted was to have the tablet chewed by the patients and followed by some cold water. One gram tablets are used every 2 hours during daytime and at night only when pains awaken the patient. The patients had no aversion or difficulty in taking the tablets.

*This work was done under the L. L. Kohn Fund to the Stomach Study Group and the Kuppenheimer Fund.

TABLE 1. — DATA OF ULCER CASES

Rec. No.	Sex	Age Years	Duration of Symptoms in Years	Treatment (in relation to ulcer)			Condition of Patient before and after Medication with Okra	
				Previous	Present	Durat. Days	Before	After
14	M.	51	3-4	Perfor. duoden. ulcer closed. Treated in M.C.* with alkalies and G.I. No. 1 diet.†	Okra‡ and full diet°	55	Pain with recurring symptoms, moderate relief with alkali.	Immediate relief. Medicine helps as much as the previous powder (alkalies). Complete relief with full diet. Gained weight. Working full time.
29	F.	45	3-5	1931 Cholecystectomy and Appendectomy. Treated in M.C.* and M.R.H.† since 1931.	Okra‡ and full diet°	49	Constant pain related to food, no relief with alkalies.	Immediate relief of all symptoms. Complaints of constipation — some epigastric discomfort. Tearing sensation different than previous. Symptoms now more neurotic. Improved on Bromides. Okra discontinued and then readministered. Conclusion — indefinite.
31	M.	34	1½	Alkalies.	Okra‡ and full diet.	49	Constant pain, also at night. Slight relief from alkali.	Very marked improvement. Immediate relief of all symptoms. On full diet after 3 weeks of therapy. Complete relief of all symptoms. Okra discontinued. Slight discomfort after 3 weeks without Okra. Constipation only complaint.
23	M.	44	6 mos.	T.B. in 1913. Hypertension.	Okra‡ and full diet°	55	Pain and belching. Soda relieved pain.	Immediate relief of all symptoms. Interrupted treatment for 3 days, recurrence of symptoms, which subsided at once after continuation of Okra. Gained weight. Feels good. Constipation.
25	M.	49	17	Appendectomy 1923. Hospitalized for operation in M.R.H.† 3-13-33.	Okra‡	72	Recurrent epigastric pain (cramplike) G.I. diet and alkalies did not relieve. (While on medical service.)	Immediate relief of all symptoms. On full diet in 1 week. Dismissed from M.R.H. 4-21-33. Complete freedom of symptoms. Okra discontinued. Free of all symptoms for 5 weeks. Working.
30	M.	43	2	Hospitalized 4-11-33. M.C.† since 9-30-31.	Okra‡ and full diet° G.I. No. 1 and No. 2.	44	Relieved by soft diet and bisodol.	Constant relief. On discharge from hospital full diet — no symptoms. Discontinued Okra. Symptoms recur in 5 days. Relieved on taking it again.
26	M.	42	5	Sippy treatment, 1930 gastro-enterostomy. 6 months symptom free, recurrence.	Okra‡ and soft diet°	56	Gastric mucin relieved for few weeks only. Entered M.R.H.† for operation.	Immediate and complete relief, for first time in 6 months. Pain free. Recurrence of pain in back and fullness with some distress 2 weeks later. Patient desired operation. Operation reveals marginal ulcer of gastric portion of gastro-jejunos-tomy.
22	F.	31	4	1931 gastro-enterostomy 1922 Cholecystectomy. Since 1932 in M.C.*	Okra‡ and soft diet°	30	Nothing helped her.	No relief with Okra.
34	M.	49	4-5	Past 8 months on Sippy treatment, had recurrences.	Okra‡ and full diet°	41	Epigastric pain after meals, constipation, nausea, belching, heartburn, abdom. cramps.	Complete relief, occasional heartburn, constipation. Okra discontinued after 3 weeks. Complaints then of slight epigastric discomfort. Some burning.
44	M.	32	6	Improved on soft diet. Improved on ulcer regime (Sippy) but periodic recurrences.	Okra‡ and soft diet°	36	Severe pain in epigastrium. Night pain.	Questionable improvement for short period, probably not taking tablets regularly.
35	M.	39	7	Since 1926 in M.C.* and M.R.H.† Admitted to M.R.H.† 1933 April for penetrating duodenal ulcer.	Okra‡ and soft diet°	34	Sippy and alkalies, only temporary relief. In hospital now on milk and cream, no relief.	Immediate relief, no pain. Discomfort in moving, slight constipation. Felt so well that he left hospital although he came in to be operated on by his own will. On Okra 4 weeks. Complete relief of symptoms. No return of symptoms after discontinuing Okra for 1 week.
45	M.	44	5	Soft diet, atropin, small doses of alkali, bromides. Relief, but recurrence after 2 years.	Okra‡ and soft diet°, then on full diet°	35	Periodic recurrences about every 4 months. Recent recurrence 2-33. No relief with alkali; some relief with atropin.	Immediate complete relief except heartburn, which disappeared 1 week later. Relief of symptoms complete for a period of 3 weeks. Heartburn returned and Okra discontinued. No return of symptoms. Continues symptoms free.

TABLE 1. — DATA OF ULCER CASES CONTINUED

Rec. No.	Sex	Age Years	Duration of Symptoms in Years	Treatment (in relation to ulcer)			Condition of Patient before and after Medication with Okra	
				Previous	Present	Durat. Days	Before	After
18	M.	28	2	1932 Appendectomy. G.I. diet and alkalies relieved somewhat. M.C.* since.	Okra† and full diet°	41	Pain, feels sick, diet and alkalies do not help him much.	Feels better, gains weight. Occasional heartburn. Distress at night.
42	F.	21	5	1929 Gastric hemorrhage. Sippy treatment. 1930 G.I. No. 1 diet* 1932 and alkalies.	Okra† and full diet°	28	Pain in epigastrium, constipation, vomiting, loss of weight, tarry stools.	Complete relief on Okra for 3 weeks. Okra discontinued; and pains returned. Okra begun again, with complete relief of symptoms.
38	F.	38	7	1921 Sippy treatment. 1923-5 Pyloroplasty. 1926 Symptom—treatment. 1933 M.C.* G.I. No. 2 diet.	Okra† and full diet°	63	Pains in epigastrium, constipation, pain after meals.	Took Okra tablets for 7 days and had complete relief. Discontinued for 35 days and had no pains or discomfort. Back on Okra tablets, no recurrence of symptoms, except slight pain in epigastrium after breakfast.
43	M.	28	4	2-10-33 M.C.* G.I. No. 1 diet and alkalies.	Okra† and full diet°	27	Pain in epigastrium, belching, vomiting, constipation, headache, insomnia, moderate relief with alkalies.	Full diet. 3-4 days after taking Okra had burning sensation in the stomach. Then complete relief. After 2 weeks of powdered Okra tablets. Complete relief on full diet. Discontinued Okra for 1 week. No symptoms on a full diet. (See Charts.)
46	M.	65	10	Sippy treatment and alkalies for 3 yrs M.R.H.† 3-2-33 to 3-18-33.	Okra† and G. I. diet No. 1.	27	Epigastric and substernal pain for 10 years. Loss weight, constipation and eructation. Hunger pain and pain after meals.	Relieved after taking Okra. Because of a possible associated angina pectoris medication discontinued. Pain returned. Okra readministered pain relieved. Constipation.

* Mandel Clinic of the Michael Reese Hospital. †Soft diet, 6 meals per day. ° Without condiments.
‡1 grm. every 2 hours. ¶Michael Reese Hospital.

Physiological Properties. The physiological properties of okra were tested on men and dogs. *The Influence of Powdered Okra on the Gastric Secretory Rate in the Dog.* Experiments on a Heidenhain Pouch dog showed that a ten minute perfusion of the pouch with okra solution did not change the secretory rate of the pouch. Feeding of a meat meal (250 gm. raw hamburger) with 5 grams of okra did not change the secretory rate of the pouch in the same dog; similar results were obtained with gastric mucin.

The Influence of Okra on the Emptying Time of the Stomach in a Gastrostomy Dog (Kestner-cannula). After control experiments, 5 grams of okra were put into the stomach through the cannula and immediately afterwards the dog was fed the same amount of food as in the control (250 grams of raw hamburger and 250cc. H₂O). The amount of semi-digested food residue plus secretion in the stomach was drained 1½ and 2 hours respectively after feeding and the amount measured. In every case the emptying time of the stomach was shortened considerably, while the acid response did not show consistent variations. In 2 controls (1½ hours

after feeding) the amount was 183 and 180cc. respectively, while after okra only 63cc. In another series (2 hours after feeding) 6 controls yielded residues between 144 and 212cc. with an average of 171cc., while after okra 83cc. of residue was obtained.

Influence of Okra on Gastric Acidity in Man. Fractional gastric analysis was performed on 14 patients with ulcer. 10 minute samples were taken for a period of 2½-3 hours. After a control period, the patient was given 30cc. of water (not done on all subjects) and additional number of controls taken. Then one gram of okra powder in 30cc. of water was introduced into the stomach through the Rehfuß tube, and another series of samples taken from the stomach. In ten patients there was a decided positive acid response, and in four a negative one; that is in 72% of all patients there was a positive acid secretion of the stomach after introduction of 1 gram of powdered okra. In four patients, fractional gastric analysis with okra, was repeated and the results always duplicated. There was never a positive response to 30cc. of water only. Controls were done on 6 normal students. There was a positive acid response to

TABLE 2. — ADDITIONAL DATA OF PATIENTS OF TABLE 1

Record No.	Name	Social Factors	X-Ray Findings	Laboratory Findings
14	McV.	Out of work for several years. Receiving aid from U.C.*	Defect along great. curv. of stomach, characteristic of g.u.†	Ingestion of okra powder did not produce change of acidity of resting stomach.
29	M. P.	Social and domestic difficulties	Duoden. bulb definitely angulated, probably due to previous cholecystectomy; unusual type of flat ulcer cannot be ruled out. Clinical impression of penetrating ulcer.	Large increase in gastric acidity (resting stomach) after 1 gm. of Okra.
31	H. K.	Dentist, newly immigrated, unemployed.	Stomach normal, duoden. cap small, does not fill.	No free acid response, but a large response in secretion after 1 gr. of Okra.
23	H. S.	Out of work (peddler). Supported by a lodge.	Definite duoden. ulcer.	Large increase in gastric acidity (resting stomach) after 1 gm. of Okra.
25	A. S.	Difficulty in earning a living in past 3 years. Supported by U.C.*	Duoden. irregularity of second portion indicating ulcer.	Large increase in gastric acidity (resting stomach) after 1 gm. of Okra.
30	B. N.	Worries over non-employment, separated from family. Supported by U.C.*	Definite duoden. defect.	No free acid in stomach juice, no response to alcohol and Ewald test.
26	H. D.	Worried over debts and unemployment.	Tender point, indicating gastrojejunal ulcer.	Free acid in (gastro-enterostomy) stomach.
22	R. W.	Mental trouble since 15 years of age. No income.	Definite marginal ulcer.	No free acid (constant suction) in resting stomach (gastro enterostomy).
34	S. P.	Out of work for 2½ years. Supported by U.C.*	Definite duodenal ulcer.	Large increase in gastric acidity (resting stomach) after 1 gm. of Okra.
44	Dr. K.	Financial difficulties.	Definite duodenal ulcer.	
35	S. F.	Out of work for 2 years. Supported by U.C.* Since 1 month earning bare living.	Definite duodenal defect.	Large increase in gastric acidity (resting stomach) after 1 gm. of Okra.
45	J. F.	Financial difficulties in past 2 years.	Definite duodenal defect.	High free acid after Ewald meal.
18	J. M.	Not working, estranged from wife. Supported by U.C.*	Questionably duodenal defect. (but clinically definite ulcer.)	Poor free acid response to 1 gm. of Okra.
42	D. B.	Worried about unemployment and wants of her family and herself.	Definite cloverleaf defect in duodenum.	High free acid after Ewald meal.
38	N. K.	Housewife, much worried about financial difficulties; former wealth lost.	Pyloroplasty, defect in this region cannot be ruled out. (Tenderness in epigastrium).	Large increase in gastric acidity (resting stomach) after 1 gm. of Okra.
43	A. B.	Worries over unemployment for past 2 years. School teacher, now works in stock yards.	Cap. small, at times does not fill completely. Definite duodenal ulcer.	Large increase in gastric acidity (resting stomach) after 1 gm. of Okra.
46	S. C.	Lost his shop 3½ years ago, and since then unable to earn livelihood. Supported by U.C.*	Ulcer defect in duodenum.	Large increase in gastric acidity (resting stomach) after 1 gm. of Okra.

*United Charities

†Gastric Ulcer

okra in three and a negative one in three.

A concentrated aqueous extract of okra powder was made in distilled water. Given intravenously to a dog (ether anesthesia), it produced a considerable drop in blood-pressure. The nature of this depressor substance is being investigated.

Clinical Experiences. The present report deals with our observations on seventeen patients with definite duodenal or gastric ulcer who received powdered okra as the only form of medication. The diagnosis of each case was made by a positive history of peptic ulcer, a definite duodenal defect on fluoroscopy or roentgenograms and by positive laboratory data. Of the seventeen patients, one with a definite duodenal defect had no free acid response to histamine on two trial tests; another patient, who was diagnosed as having a gastrojejunal

ulcer, showed a gastric ulcer at operation, and another patient was also diagnosed as a post-operative gastrojejunal ulcer. The duration of symptoms varied from seventeen years to six months, with an average duration of five years. The patients were observed in the Mandel Clinic and only six were hospitalized because the duration and the severity of the symptoms warranted surgery. All patients without exception were having active symptoms at the onset of the treatment, and all but one had had one or more periods of present day medical or surgical ulcer therapy. In one instance, a patient who was having moderate relief by taking alkalies was transferred to treatment with okra. The diet used during the first week was a soft, residue free, seedless diet and was administered in small feedings six times a day. 1 gram of powdered okra in tablet form, with ¼ glass water was

given every two hours. After the first week the patient was put on a soft full diet, free of condiments and the powdered okra given as previously noted. If the patient complained of distress early in the morning or at midnight he was given two tablets (2 grams) at this time. Under the okra treatment the patients in the hospital were up and about, while the patients in the clinic were at work or following their daily routine.

Results: Of the seventeen patients observed, fourteen had immediate relief of symptoms on taking powdered okra as indicated above. One patient, whom we suspected of having a gastrojejunal ulcer, was also immediately relieved for the first time in six months. This patient had had relief for a time by gastric mucin, but his symptoms returned. After two weeks of therapy with okra he was improved, but since he was fearful of the return of symptoms, and again requested surgical treatment, he was operated on.

One patient had no relief for three days after taking powdered okra; relief of symptoms came on the fourth day and he has been symptom-free on a full diet and hard work. One patient with a duodenal ulcer, who had had a gastroenterostomy has not obtained relief at any time. Another patient, a physician, had questionable relief, but this patient admitted that he was irregular in taking the tablets. It is a most striking fact that of the six patients admitted to the hospital for surgical treatment only one patient was operated on. This was the patient who had severe symptoms, and had been previously relieved by gastric mucin and was unwilling to continue medical therapy. The remaining five refused operation because of the definite relief of symptoms following okra, although they had previously requested surgery.

The administration of powdered okra tablets was discontinued in twelve patients, who became symptom-free after one to five weeks of administration. Five of these patients had immediate return of symptoms. On readministering the okra tablets, these patients were immediately relieved. In one patient we were unable to come to any conclusion as to the effect of withdrawing medication. One patient had complete relief of symptoms for thirty-five days after one week of treatment. The symptoms then returned; they disappeared as soon as okra

was taken again. Two patients, who had complete relief after four weeks of treatment, complained of slight burning and some discomfort when no okra was taken, but continued without it on a full diet and are still being observed. Four patients, after three-five weeks of treatment, have been free of all symptoms for one-five weeks and are on a full diet. The patients complain of occasional belching, but more often of constipation following the use of the okra tablets. This was corrected by the use of mineral oil. Two of the patients complained of increased heartburn after taking the okra for a week or more, although they were relieved of symptoms of pain. On discontinuing the medication complete relief of all symptoms occurred.

COMMENT

Our experience with powdered okra in a selected group of carefully studied peptic ulcer patients, points to the relief of the predominating symptoms of pain and gastric discomfort following a short period of administration. This confirms the recent report of Jones, Ivy and Atkinson¹. We wish to emphasize that there are many factors involved in evaluating the relief of symptoms in gastric disease. Such factors were carefully interpreted and controlled as much as is possible in a clinical study. (See tables 1 and 2). The relief of symptoms despite an active acid response in a greater number of our patients (72%) may seem at first difficult to interpret. It has been shown by one of us (Meyer, Fetter and Strauss)² that the pain of gastric ulcer is independent of acid secretion. We suggested that the associated gastritis is the principle cause of pain. It is very likely that the okra relieves the symptoms by alleviating this gastritis and duodenitis.

These observations are in accord with the remarks of Mathieu¹ who raised the question as to whether the favorable results, by the use of agar mucin was due to some other factor than a mechanical one.

Our observation in dogs of the decreased emptying time of the stomach following the administration of okra suggests that this also may be an important factor in the relief of symptoms.

The increased acid response to okra in a greater number of our patients (72%) and in 50% of normal students suggests a striking similarity to the results obtained by Rivers⁴ and

others on using impure gastric mucin. Whether this vegetable contains a histamin-like substance is now being studied. (see above) It is striking that in but two instances the symptoms (such as heartburn) following the use of okra were sufficient to warrant its discontinuance.

We wish to emphasize, that the present observations merely indicate the use of powdered okra as a valuable substance in the symptomatic relief of peptic ulcer. We hope to present, in the future, clinical and experimental data, of the effects of this substance on the healing and prevention of duodenal ulcer. For the present we recommend its trial as a clinical experiment, and wish to emphasize the need of continued observation and control before forming any definite conclusions as to the efficacy of okra in the cure of peptic ulcer.

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CYSTOGRAPHY AS AN AID IN UROLOGIC DIAGNOSES*

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The cystogram is a radiogram of the bladder after it has been filled with contrast medium. It is a distinct aid to cystoscopy and in many instances the only method of determining bladder pathology when cystoscopy is impossible or contra-indicated.

The cystogram has routinely in the past been made by filling the bladder with contrast medium through a catheter in the urethra. Since the advent of intravenous urography however, the filling of the bladder after excretion by the kidneys permits not only a radiogram of the kidneys and ureters, but also of the bladder. However, with certain exceptions the filling of the bladder through the urethra is the best method for cystography.

Intravenous urography is one of the greatest advances in urology in the past 30 years. It

overshadows all other advances in urology which are of distinct note in the last ten years, and in the field of roentgenology is one of the outstanding advances during the past few years. While the cystogram is not a new procedure, and is not as frequently used as other diagnostic procedures it has a distinct place in our armamentarium.

Cystography is a valuable adjunct to cystoscopy and in some cases may supplant ocular examination as a diagnostic measure. It is of special value in stricture of the urethra where instrumentation is inadvisable, in pathological conditions of the bladder where visualization is impossible because of hemorrhage, and in severely infected and shrunken bladders where tolerance to distension is poor. In vesical neck obstruction in infants cystography is invaluable. In obstructive lesions of the bladder in adults cystograms give us added information regarding the type of obstruction and secondary bladder changes. They are also an aid in establishing diagnoses of fistulous tracts from the bladder, show the extent of vesical neoplasms, and help in detection of roentgen-ray transparent calculi. In bladder diverticula, cystography is of value in determining their size, depth and emptying ability. Intravenous cystography is of extreme help in early and prompt recognition of traumatic bladder conditions, and a roentgenologic examination with intravenous dye should be routine in every suspected case of injury to the urinary tract.

For routine work 6.5% sodium iodide has been well tolerated, given satisfactory films, and is most efficient. The newer preparations that have been developed for intravenous urography may be used, are non-irritating and non-toxic but are more expensive. A flat plate of the tract should always be made preliminary to cystoscopy and before injecting any opaque solution. This gives the outlines of kidney, psoas muscles, oftentimes the bladder, the bony pelvis and 11th and 12th ribs. In making the cystograms, 150-250 cc. of the iodide should be injected, an antero-posterior and then right and left oblique films should be made. These are made to demonstrate any diverticulae that might be overlooked by a direct antero-posterior picture. Then the bladder is emptied by catheter and a final plate is taken, after injecting a similar

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amount of air. This will aid in demonstrating retention diverticulae, tumors and intravesical prostatic enlargements. The inflation of the bladder with air, while very valuable and at times definitely indicated carries with it the danger of forcing air up the ureters into the kidney, producing air embolism and death. However, cystography by this technique and carried without undue pressure and overdistension of the bladder has proven a relatively simple, painless procedure with none of the complications of shock, hemorrhage and air emboli that have been mentioned. Oxygen may be used as a contrast media, and may be of particular value in outlining bladder calculi.

Recently the use of a new preparation, thorotrast, has been described as of particular value in demonstrating bladder pathology, and has been used widely in some European clinics. On account of its high viscosity it is said to be more suited for cystography than for retrograde pyelography, and another form of the drug has also been adapted for intravenous roentgenography of the liver and spleen.

Hypertrophy of the prostate produces characteristic changes in the cystogram depending upon the degree and type of glandular enlargement, and cystography should be routine in this group of cases. With the increasing number of transurethral prostatic operations the value of cystography may be increased and serve as a further check on the results of bladder neck resections.

On cystography, prostatic enlargement may show a filling defect about the vesical neck and with considerable enlargement the base of the bladder is elevated off the symphysis and the base becomes broadened. In hypertrophy which is chiefly intra-urethral there may be no neck changes on the cystogram, and also many cases of extensive hypertrophy show but little elevation of the base. The secondary changes in the cystogram are due to disturbance of the function of micturition and consist of irregularity in contour of wall due to obstructive trabeculation, cellule formation, sacculation, diverticula and ureteral regurgitation of fluids from the bladder.

In the study of diverticula the cystograms determine their exact size, position, and relation to the bladder and ureters. The most common sites for diverticula are in the ret-

rotrigonal area and adjacent to the ureteral orifices. Less often they are on the dome and lateral walls. Treatment of them depends upon their ability to empty which is demonstrated by roentgenograms. By injecting opaque solutions, then emptying the bladder of the solution and using air as a contrast media, inability of a diverticulum to empty may be determined by the retention of the opaque solution in the diverticulum. Another method of studying diverticula is by the passage of a radio-opaque ureteral catheter into the orifice. Cellules and pseudo-diverticula can be differentiated from the true diverticula by their shallowness on plates and on cystoscopy are seen to lie between the bands of hypertrophied muscle fibres.

Regurgitation of fluid into the ureters is present in some cases of prostatic hypertrophy and can be shown by cystograms. This explains some of the associated upper urinary tract infections due to insufficient bladder evacuation and in infants especially, should all cases of persistent pyuria have a cystographic study made to determine the condition of the urinary tract and to detect regurgitation of urine into ureters and renal pelvises. Kretschmer observed ureteral reflex in three of a series of ten normal children and we must differentiate the normal from the pathologic in these cases.

In diagnosing bladder tumors cystography is frequently an aid in determining the size and extent of the growth. Oftentimes a cystoscopic examination is unsuccessful in this group of cases because of vesical intolerance or excessive hemorrhage and cystograms may be of particular help and act as a guide towards treatment. Papillomata are characterized on the films by circumscribed, filling defects with regular margins, with the edges fading towards the cavity of the bladder. In malignant growths the deformity is usually more irregular, and infiltration produces faded rigid outlines. With advanced neoplasm the bladder becomes shrunken, intolerant and capacity and distensibility are lessened. If the tumor invades the region of the ureteral orifices, secondary ureteral insufficiency and regurgitation may be seen. However, cystoscopy, where visibility can be obtained, is most important in determination of type lesion, be-

cause not infrequently a large pedunculated benign tumor may simulate and be considered as an infiltrative mass. Repeated cystograms are of particular help in determining the progress of the condition and improvement under treatment.

For early diagnoses of intra and extraperitoneal bladder rupture the method of Vaughn and Rudnick, of passing air per catheter into bladder is valuable. With intraperitoneal rupture the air escapes into the abdominal cavity and by placing patient in upright position the air bubble will accumulate underneath the diaphragm, a procedure similar to X-ray determination of perforated hollow viscus. In an extraperitoneal rupture the air can be seen in the perivesical tissues. With the introduction of intravenous urographic media, ruptured kidney or bladder can be detected similarly by the extravasation of the dye from the normal channels.

Variations in cystograms may also be seen as a result of extra-vesical pathology. Pericystitis and space of Retzius infection may cause pressure changes in cystograms. Such conditions of the female genitalia as pregnancy, ectopic gestation, pelvic abscess, tumors of the womb and adnexa, and prolapse may cause filling defects on cystography, in addition to urinary disturbances. Tumor of the cervix may cause an elevation of base of bladder similar to that seen in prostatic enlargement. As a supplement to cystoscopy in cervical malignancy, cystography may aid in determination of intra-vesical extension, or early bladder wall invasion, and this serve as a guide towards therapy, especially in the usage of radium.

In central nervous system disease and disturbances of the function of micturition, the cystogram is of diagnostic aid. Very often, the first symptoms of a spinal tract disease may be manifested by urinary dysfunction. The characteristic cystographic findings of a neurogenic bladder are enlargement and irregularity in outline. Cellule formation, diverticula and ureteral regurgitation may be apparent in long standing conditions, and with ureteral valve incompetency hydro-ureter and hydro-nephroses may follow. With sphincteric relaxation, the cystogram may show dye in posterior urethra.

Radiographs of the bladder are of extreme

importance where a diagnosis of stone is suspected and a flat plate should always precede cystography. For visualization of stones casting only a faint or no shadow, injection of air into the bladder will outline the stone shadow more distinctly. If the question of extravescical shadow arises, cystograms made with contrast media in antero-posterior and lateral views will aid in diagnoses. In differentiating shadows over vesical area one must consider phleboliths in gastro-intestinal tract, foreign bodies in the female genitalia and calcification of ovarian and uterine cysts.

Cystoradioscopy, or bladder visualization before a roentgen-screen after injection of contrast media is another adjunct to urologic diagnoses, but has been used relatively less. By this method the bladder can be studied in different planes, and its physiologic function determined, in addition to diagnosing gross abnormalities.

From the foregoing, the immense value of roentgenologic examination of bladder conditions may be seen. Cystography is not intended to supplant cystoscopy, but when combined with ocular inspection, gives us invaluable aid in diagnoses. With the furtherance of intravenous urography and added experience, detailed roentgenographic study will continue to shed new light on pathologic conditions of the urinary tract.

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UROLOGIST AND ROENTGENOLOGIST: THEIR INTER-RELATIONSHIP*

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The object of this paper is to reconsider some of the established facts relative to urologic study by x-ray, and in that way to perhaps help towards better diagnosis of existing urologic disease.

One of the most fundamental requirements for proper x-ray study of the urogenital tract is the acceptance of a routine of procedure which is sufficiently complete in its scope to elicit the presence of existing pathology. After the presence of disease has been noted additional procedures may be resorted to if necessary to establish the character or prove the existence of the lesion.

The open plate of the kidney ureter and bladder is in my opinion of as much importance as are the films with opaque media. I need not recite to you the many points of importance that it offers, but will emphasize that no urologic examination by x-ray should be started by its omission or considered complete until such an exposure is made. A calculus shadow in the open plate strikingly illustrates the value of such a film when it is compared to the film with opaque ureter catheter in place or pyelo-uretero-gram. Also the open plate with apparently no signs of existing pathology, that is the plate which often is considered "Negative," is in fact many times a foundation of defense for or against existing shadows found in subsequent films made after injection of opaque media.

I prefer to first investigate all upper urinary tract disease, that justifies such investigation, by ureteral catheter and retrograde pyelography, since the ureter catheter is able to afford so much valuable clinical information. After which, by virtue of existing disease, intravenous urography is resorted to as a necessary and essential procedure for complete diagnosis. In renal tuberculosis I feel that it might be well that intravenous urography be placed ahead of retrograde pyelography. Since by such preliminary procedure one may be supplied with a great amount of informa-

tion before the tuberculous patient is subjected to instrumentation.

In order to appreciate the existence of disease in the upper urinary tract one must be aware of the normal anatomic conditions present in the kidney and the mechanical as well as the physiologic ability of the kidney to excrete urine. The roentgenologist, I believe, should be thoroughly acquainted with the mechanical phase of urinary emptying of the renal pelvis, the process of transfer of urine from the kidney pelvis down the ureter and into the bladder, and then the emptying of the bladder through the urethra. With these facts well established in our minds, then the existence of obstructive urologic lesions and their effect on the upper urinary tract will become more strikingly apparent on exposed films.

Dr. William H. Herbst has through the use of pyeloscopy very strikingly shown the normal mechanism of urinary excretion from the renal pelvis.

Dr. Cumming of Detroit, through serial pyelography has shown the striking variations in the renal pelvis and ureter under normal emptying conditions. Many apparent hydro-nephroses and ureteral disfigurations are in reality normal changes taking place in a flexible pelvis and ureter during the peristaltic wave incident to the transfer of urine from the renal pelvis to the bladder.

Dr. T. D. Moore of Memphis, has devised a cassette in which one-third of the film is exposed and in rapid succession 3 films of the injected kidney pelvis and ureter are taken. These films again demonstrate the conditions present incident to the emptying time of the kidney.

The late Dr. Belcher of Cleveland, some years ago demonstrated the chance of error in diagnosis due to under filling of the renal pelvis.

Normal renal pelvis filling and emptying is a basic guide to recognition of most all renal pathology. To recognize renal pathology by x-ray and pyelography means the recognition of the deviation from normal as shown by those particular films. Hence in the creation of a pyelogram which is to present the actual condition of the renal pelvis and which is to present the picture of disease present, one must create such a pyelogram with utmost care and

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precision, so as not to either underestimate or overproduce such evidence.

The advent and use of intravenous dye to exhibit excretion urography has taught us more than the ease with which one can visualize the kidney pelvis. With the many advantages it has given us it has taught us that the excretion from the kidney of dye supplied intravenously, is a smooth physiologic excretion, undisturbed by human hands and that delicate shadows of filled calices, normal or abnormal, retention of dye through obstruction, or its rapid elimination, all take place under conditions truly existing in the kidney at the time of examination, which in no way is influenced by such factors as underfilling through a ureteral catheter, or bold over-distention by the same method.

I cannot help but feel that if the roentgenologist attaches the same appreciation to these factors as the urologist, his path toward proper interpretation of urologic films will be greatly enlightened. The diagnosis of "Hydronephrosis," "Large Kidney," etc., is meaningless except for the symptom expressed. Since we know hydronephrosis is usually secondary to obstruction or inflammatory disease, the presence of a hydronephrotic kidney pelvis calls for further evidence of the reason for its existence. It is true that many urologists interpret their own films and I make use of that practice myself; however there are many instances in which the roentgenologist is called upon to x-ray the urogenital tract and to commit himself as to the presence of probable existing pathology and in such instances the roentgenologist may be of extreme value in suggesting further films under different conditions, the nature of which he has learned through his appreciation of the reaction of normal renal anatomy and gross pathology of the urinary system, when subjected to the influences of opaque media.

I shall now show a few slides to illustrate certain types of renal and ureter pathology which I hope may be of value to you in the diagnosis of similar conditions. I shall omit a detailed clinical account of each case and will mention only those points essential towards the interpretation of the film shown.

Case 1. Slides 1, 2 & 3. Woman aged 67 with painless hematuria for one week, no fever or chills,

urine negative except for gross blood. No pus in bladder urine or either kidney urine as obtained by ureteral catheter. Cystoscopy showed blood exuding from the right ureteral orifice. The injected kidney pelvis is shown, exhibiting a central excavating appearance. The question of infected kidney is ruled out by the absence of clinical signs and the absence of infected urine from that side. The question of tumor is foremost in our minds and a papillary growth of the renal pelvis with destruction of adjacent parenchyma must be considered. Parasitic disease was ruled out by the absence of such evidence as shown by the specimen of urine obtained. The question of ruptured cyst must be considered as likely in view of the apparent spherical shadow cast by the opaque media. On operation a solitary hemorrhagic cyst of the kidney is found. The cyst showing a small pin-point rupture into the pelvis.

These next two cases illustrate types of intermittent hydronephrosis due to extra-renal aberrant vessels, which by virtue of their presence and position cause obstruction to the outflow of urine from the renal pelvis.

Case 2. Slides 4, 5 & 6. Man 32 years of age with attacks of pain in the left kidney region not associated with fever or pus in the urine. The first pyelogram shows that made with an injection of 10 ccm. of sodium iodide solution, the ureter appears to be implanted rather high in the pelvis than at the usual lowermost position. By increasing the injection to 14 ccm. and then to 18 ccm. the apparently high insertion of the ureter disappears, and with it a well defined filling defect transversely across the ureter at the uretero-pelvic junction appears. The diagnosis of facial band with or without aberrant vessel was made. The overfilling of the pelvis was essential in that it demonstrates the effort of the distended kidney pelvis to push aside the obstruction. At operation a facial band with a large vein in it swept anterior to the ureter and firmly exerted an obstructing effect upon the ureter. This facial band and vessel were resected with immediate release of the ureter.

Case 3. Slides 7 & 8. Illustrates a similar case in a woman aged 27 with left side renal pain. The vessel in this instance ran transversely across mid-pelvis as shown by the apparent filling defect in the upright film, and which was confirmed by operation.

Case 4. Slides 9 & 10. Man aged 70 with mass in right lower quadrant, fever, pus in urine and occasional pain in right kidney region. The first slide shows a definite hydronephrosis of the right kidney pelvis, but is in itself incomplete, in that the ureter is underfilled. By filling the kidney pelvis and ureter completely, one sees the true situation, which is a hydronephrosis incident to ureteral obstruction by an extrinsic tumor.

Case 5. Slides 11 & 12. Woman aged 42. Sudden pain in left renal region with fever and chills, in bed for one week, then up walking about. Patient walked into hospital for urologic examination. These slides again show the value of completely filling the renal pelvis with opaque media. The first slide shows an impacted calculus at the ureteral pelvic junction with apparent hydronephrosis or pyonephrosis of the renal

pelvis. Further filling of the kidney pelvis shows a definite parenchymal necrosis of the lower pole which has approached the capsule and which is nearing rupture through to peri-nephritic tissue. The value of this film lies in that it prompted an immediate nephrectomy, so as to prevent a peri-nephritic abscess, as a complicating factor.

Case 6. Slides 13 & 14. Man 48 with old pulmonary tuberculosis, hematuria, pyuria, and frequency of urination. This pyelogram gives the gross picture of a hydronephrosis, but not in my judgment a picture of well defined renal tuberculosis, although he had a typically tuberculous bladder. The specimen shown is that of a massive, dry, renal tuberculosis. The bifid extra-renal pelvis is clearly shown by the pyelogram.

Case 7, slide 15. Man aged 22 with fever, leucocytosis, pain in the left kidney region. A visible fullness, spasticity, and marked tenderness in left costo-vertebral angle. This open plate shows a shadow suggestive of perinephritic abscess; the pyelogram was normal. Operation proved the presence of a large perinephritic abscess.

The next three cases are ones not of my own, but the films and clinical data of which have been very graciously supplied to me by three physicians in Peoria. They are shown to demonstrate the effect of forced over-distention of the renal pelvis with opaque material injected through a ureteral catheter. The first slide No. 16 is included to call your attention to the phenomenon of pyelo-venous backflow which I am sure you have seen many times before. It shows the extravasation of dye into renal parenchyma, both in patchy deposits and in a well shaped fan-like spread, through the parenchyma to the cortex in the upper pole. This type of extravasation of dye into the renal parenchyma is not uncommon with the least bit of over distention, and many times one sees with it sub-capsular collections of dye.

These next two cases however illustrate the above points, but in addition show extra-renal extravasation of dye which gives very bizarre shadows. The first case, slides 17 & 18, is that of a man, laborer, who after lifting a heavily weighted box, experienced a sudden sharp pain in his left kidney region which was very shortly followed by bright blood in the urine. He was hospitalized immediately and a ureter catheter passed on the affected side and this pyelogram made, some 20 ccm. of opaque solution being injected. The question of urinary extravasation incident to trauma, or tumor of the kidney was considered. The patient lacked all clinical signs of urinary extravasation, so I suggested the use of intravenous dye to prove the presence or absence of the apparent extravasation. The second slide made following the intravenous injection of Neo-Iopex, shows a normal renal pelvis on the affected side.

The next case, slides 19 & 20, is that of a woman with a pain in the right upper quadrant, in which urologic investigation was made to determine the status of the right kidney. 25ccm. of opaque solution were injected through a ureteral catheter and this picture obtained

which shows a marked extra-renal loss of opaque solution. Here again, all clinical signs of urinary extravasation were lacking, and the suggestion to repeat the examination by intravenous urography and a second retrograde pyelogram was carried out. This slide shows the second retrograde pyelogram of the same side made several days later and shows a normal renal pelvis.

The next case, slides 21 & 22, is that of an ectopic kidney with extra-renal pelvis and extra-renal calices. The patient was a man of 35 with a mass the size of an orange in his right lower quadrant, the upper edge of which could be felt rising up over the brim of the bony pelvis. He had a persistent albuminuria without casts. His blood urea was 30 mg. per 100 cc of blood (which dropped to 16 mg. on the 9th day following nephrectomy). The right kidney function could not be estimated while the left kidney had compensated two fold. The slide shows a compressed pancake type of kidney resting in the bony pelvis with calices and pelvis directed upward. The fact that the calices are extra-renal can be shown by the gas shadows in the bowel between them and the absence of parenchyma shadows around them, and also by the observation that the ureter catheter in the upper calyx changes its position in subsequent films with motility of the pelvis as influenced by intra-abdominal pressure. A ureter catheter changes position in a posed or rotated kidney, but maintains the same relative position, while the ureter catheter in the extra-renal calyx may be pushed in various directions or bent towards the renal parenchyma by intra-abdominal pressure or change in position of the patient (as in this case). This change in the position of the catheter in turn changes the position of the calyx.

CONCLUSIONS

1. When x-ray studies are used to investigate urologic disease a definite routine of procedure is necessary.
2. The open plate of kidney ureter and bladder must not be omitted.
3. Underfilling and over distention of the renal pelvis with opaque media leads to false impressions of the pathology present.
4. Increased filling of the ureter and renal pelvis with opaque media in moderation is often essential towards complete recognition of the existing lesion.

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To win success:

- Be brief—politely.
- Be aggressive—tactfully.
- Be emphatic—pleasantly.
- Be positive—diplomatically.
- Be right—graciously.

—Brooklyn Central.

THE VALUE OF ROENTGENOGRAMS IN LESIONS OF THE URINARY TRACT*

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In their recent volume on Roentgenographic Studies of the Urinary System, Lower and Nichols state: "Perhaps in no other field of medicine or surgery has the roentgenogram been of more signal value than in the diagnosis of diseases of the urinary tract." Without doubt all members of the radiographic and urological specialties will concur in this statement.

Since the epochal work of Von Lichtenberg in 1906, radiographic methods and studies of the urinary tract have progressed to an unusual degree culminating in the rather recent introduction of intravenous pyelography.

Certain fundamental principles in diagnosis are constant. An exhaustive history, a searching physical examination with adequate laboratory findings remain the basic structure upon which a diagnosis is built. In lesions of the urinary tract, the cystoscopic examination together with a detailed roentgen study are necessary procedures. A correlation of the findings thus ascertained minimizes the possibility of error.

It would be presumptuous on my part to speak of the method of preparation of the patient or the technique of radiography. That is purely the function of the roentgenologist. I believe, however, that harmonious co-operation between the urologist and roentgenologist is a vital factor in solving many obscure and difficult conditions.

There are many cases where a diagnosis without the aid of a roentgen examination is impossible. Radiographic findings frequently supplement or confirm the data acquired by the urologist. Given the various reports, and correlating them in the proper manner, we can be assured few cases will be missed. We cannot hope to achieve perfection, but we can reduce the errors to a minimum.

The removal of a solitary kidney would never occur if the above considerations were applied. Many other unjustifiable mistakes can be eliminated by the application of a routine mode of examination.

Viewed from another angle, radiographic examination of a case without urological investigation may likewise prove disastrous. The writer is reminded of a case seen some years ago in which, following an attack of pain in the right renal region, a plain radiogram was taken. A shadow was noted, presumably in the right kidney area. A pyelotomy was done but the surgeon failed to locate the stone. Urological examination in conjunction with a roentgenogram disclosed the shadow outside the kidney, a calcified gland.

In all cases of renal lithiasis involving small stones, radiographic examination is made immediately preceding operation. The movement of stones in the ureter is too well known to permit of further comment.

Tumor of the kidney through compression of the renal pelvis with a resulting dilatation of the calyces lends itself readily to radiographic diagnosis and this is particularly true in many instances of renal neoplasm where hematuria is not a symptom.

The roentgenologist can be of invaluable assistance in malignancy in any portion of the urinary system. Radiographic views of the skull, chest, and long bones are required in all cases of new growth in the urinary tract. Metastasis having occurred, surgery is contraindicated, other than for symptomatic relief. In this connection, I am reminded of an elderly gentleman who had been subjected to a period of treatment for some type of rheumatism. Cystoscopy and rectal examination revealed a nodular obstructing prostate, apparently malignant. A roentgen study disclosed an "ivory pelvis." How frequently, following a diagnosis of renal tumor, metastatic growths are found in the lungs.

In renal tuberculosis, the roentgenologist can be of assistance, although the diagnosis is most often made following cystoscopy and animal inoculation. For those who hesitate to do retrograde pyelography in tuberculosis of the kidney, intravenous urography is helpful.

Hydronephrosis and pyonephrosis can readily be diagnosed by urological methods, the amount of residual urine found in the kidney being of decided help. However, a pyelogram will verify the diagnosis, showing a dilatation or fragmentation of the kidney involved.

Renal ptosis, anomalies of the kidney, of

*Read before Section on Radiology, Ill. State Med. Soc., Peoria, May 16, 1933. In Symposium on Genito-urinary Diseases.

position and number, are practically impossible of detection without assistance from the roentgenologist. In this connection, I might add that cases of incomplete reduplication of the ureter can be diagnosed only by x-ray studies.

Peri-nephritic abscess not infrequently gives rise to difficulty in diagnosis. Pain and pyrexia are the common findings together with a normal urine. It is here that a carefully made roentgen film will show a dimming or total absence of the psoas shadow with frequently a curvature of the spine away from the affected side.

The diagnosis of ureter strictures and kinks is made possible by carefully done retrograde pyelo-ureterograms or by intravenous urography. The bladder may be readily examined cystoscopically but there are occasions when much assistance can be obtained from a well executed cystogram. The determination of the presence of diverticula, the contour of the obstructing prostate, and the size and amount of vesical infiltration of bladder tumors can be ascertained in this manner.

Finally, in urological work in children, the roentgenologist is a valuable aid. In a large series of cases where urological symptoms were present, radiographic assistance was constantly required and the results obtained demonstrated very clearly the worth of the procedure.

It is my firm opinion that in most cases of urinary tract pathology the assistance gained from a properly conducted roentgenological examination correlated with the data obtained from other examinations offers the greatest hope in solving our most difficult problems.

DISCUSSION ON SYMPOSIUM ON GENITO-URINARY DISEASES

Dr. Herman L. Kretschmer, Chicago: Mr. Chairman and members of the Section on Radiology: It is a great privilege to open the discussion on this group of exceedingly interesting and well prepared papers, that have covered such a wide variety of subjects. I am sorry that in the few moments at my disposal I cannot discuss all of the various points brought out by the essayists.

Dr. Heckel discussed the failure to obtain a pyelogram after the intravenous injection of dye. May I emphasize the great importance of interpretation under these circumstances? Failure to obtain a pyelogram does not always mean that the patient has a dead kidney. Lack of appreciation of this fact has led to re-

moval of the kidney. I have seen several normal kidneys that were removed due to faulty interpretation.

Failure to obtain pyelograms may be due to disturbed function as may be seen in the prostatic. In certain cases of great renal activity no visualization is obtained due to the rapid emptying of the pelvis. Unilateral failure to obtain visualization may be due to reflex anuria due to an impacted stone in the ureter and, therefore, not due to a dead kidney. Appreciation of this fact should direct surgical attack toward removal of the stone and not the kidney. In several cases in which nephrectomy was advised, based upon a diagnosis of the presence of a dead kidney, removal of the stone was followed by a rapid return of normal function. In children failure to obtain visualization may be due to rapid emptying of the renal pelvis.

In all cases in which intravenous pyelography fails to visualize the pelvis a retrograde pyelogram should be done.

Undoubtedly one of the greatest fields of usefulness of intravenous urography is in cases of stone and in the obstructing uropathies, e.g., hydronephrosis. Intravenous urography is also of great value in the urologic study in infants and children and often avoids the necessity of subjecting these little patients to a cystoscopic examination.

Dr. Burstein emphasized the fact that the systogram is not a substitute for systoscopy. I wish to agree with this statement and to say that this very valuable procedure should always be considered as an adjunct of a carefully done cystoscopic examination.

Great care must be exercised in the reading of cystograms, especially in the presence of a filling defect. I have repeatedly seen errors in reading cystograms showing the presence of a filling defect in which a diagnosis of bladder tumor was made, and at the cystoscopic examination no tumor was found. It is well to always bear in mind the fact that a filling defect may be due to extrinsic lesions, such as a full bowel, fibroids and ovarian cysts.

I believe the greatest value of cystography is in the diagnosis of bladder diverticula. It shows the number, shape and size of diverticula in a most striking way. And there too it often reveals the presence of a diverticulum when least expected and often demonstrates a diverticulum overlooked at the cystoscopic examination. As you all know, it is relatively easy to overlook a small opening of a diverticulum in the presence of a severe cystitis or when the opening is hidden by an enlarged prostate.

Dr. Adelsberger stressed the importance of always beginning with a flat plate. This is an exceedingly important point and will save you much embarrassment. It is relatively easy to come to wrong conclusions in cases of large branched stones in which a pyelogram has been made without first taking a flat plate. He also called attention to another important point, namely, to avoid overdistention in making retrograde pyelograms.

I think Dr. Sprenger brought out a very important point when he stressed the great importance of taking

a very careful history and then making a careful and complete physical examination and this to be followed by a flat plate. He has also called attention to the supplemental value of the roentgen ray in the diagnosis of malignant disease, especially in determining the presence of metastasis to the bones. In malignant disease of the bladder and especially of the prostate, the roentgen ray may show the presence of bone metastases when least expected. These are of two types, osteoclastic and osteoblastic. In the osteoclastic type no problem is presented in differential diagnosis. However, in some of the osteoblastic cases it may be difficult to differentiate Paget's disease. This differentiation is of the greatest importance since it may weigh for or against a major surgical procedure.

Dr. F. Flinn, Decatur: This subject has been covered very thoroughly by the essayists and the other discussants of these papers. There are one or two points that I would like to emphasize, in particular, the pathology shown by the cooperation of these two specialties. There are no two specialties that are more necessary to one another than the radiologist and the urologist. I do not know how they would get along without each other. I like to think of the radiologist as the link between the general practitioner and the urologist. I have had that impressed on me in several cases. One young woman was sent in for a flat plate looking for urinary calculi and none were found. For some reason the urological examination was postponed at that time and a second time the patient was sent back for a flat plate. The report was negative for urinary calculi and examination by ureteral pyelogram was not done because the patient had become pregnant. The condition became so severe that the patient came to the hospital and the urologist was called in. On intravenous pyelograms it was found she had advanced tuberculosis of the kidney. I believe if the urological examination had been made at the time the first film was taken this patient could have been saved.

One point brought out by one of the essayists was the advantage of a flat plate in accidents in which there is rupture of the bladder. This is another case where the radiologist acts as a link with the urologist. After we get both the intravenous pyelograms and other radiographs I feel then that the radiologist and urologist are ready for consultation. Until that is done we are often at sea. Another matter in which they have found cooperation to advantage is extravasation of the medium in the pelvis. My last point is that we should probably do more re-examinations than we do. Very often we have found conditions in which neither the radiologist nor the urologist are satisfied and I do not hesitate to recommend re-examination.

Dr. B. L. Adelsberger, Peoria: I never make bilateral pyelograms on one film. The first shown in these cases represented the pathologic kidney, and the second film shows the normal opposite kidney and whatever retention of media the pathologic kidney may exhibit, which probably gave Dr. McKenna the impression of bilateral injections made on the same film. The other point he mentions concerning the aberrant vessel was

a plate in which the catheter had been withdrawn to the lower third of the ureter and the injection made, the ureter dilating above the catheter by virtue of the injection. I thank the officials of this section for inviting me to be here this afternoon, and those who discussed my paper.

Dr. Sprenger (explaining slides): I will present a few slides which will show how definitely pathology may be shown by the proper radiographic technique. A growth in the upper pole produced this marked deformity in the renal pelvis. The patient was struck in the right kidney region posteriorly by a golf ball which had traveled about 150 yards. There was slight hematuria that evening. As he had been perfectly well prior to that time, he connected the hemorrhage with his injury. Examination disclosed his condition was not due to injury and on operation a kidney containing a large tumor was removed.

This second patient had a large renal neoplasm which crowded the ureter across the vertebral column. Note particularly the gall stones which were an incidental finding.

The next case shows a marked deformity in the pyelogram in a patient 38 years of age. A diagnosis of unilateral tuberculosis was made. Following removal of the kidney, tissue section disclosed an actinomycosis and a tuberculosis.

The next group of slides show the value of radiographic study. We see here branched calculi filling the renal pelvis. In one case stones are bilateral. This slide (indicating) was taken five years prior to the one preceding and shows the rapidity of growth of certain types of calculi.

The next two slides are of patients with ureteral calculi. Movement of the stones can be closely followed by frequent x-ray studies.

Radiographic study in children is very important. This patient was a child 6 years of age with a huge dilatation of the right kidney and right ureter with a marked involvement, as you will note, of the left kidney and ureter. Indwelling catheters were used over a period of weeks. A bad prognosis was given and the parents decided to have the child die at home. A year passed when I learned that the child had fully recovered its health. Apropos of this case I might suggest that a prognosis should always be guarded.

The next patient is a child less than one year of age with a congenital stricture at the uretero-pelvic juncture. (Indicating.) Nephrectomy was done after 9 months effort to dilate the stricture with indwelling catheter.

The next patient is a child 6 months of age. You will note the enormous dilatation of both kidneys and ureters. A large ureteroceles was found on the right side. Autopsy showed both kidneys practically destroyed.

The next slide shows a congenital stricture at the uretero-vesical and uretero-pelvic juncture, age 3 months. Temperature was of the septic type and the patient was very ill. Indwelling catheter was used repeatedly but all efforts to relieve the condition failed.

Nephrectomy was done and the child is perfectly well after a lapse of three years.

The last slide shows what appears to be a stone in the lower third of the left ureter. The calculus was apparently impacted and a ureterostomy was attempted. The calculus was apparently impacted and a ureterostomy was attempted. At operation instead of a stone a dense band of adhesions was found constricting the ureter. A lumbar incision was then done and a badly damaged kidney removed.

Dr. Hilt, Springfield: There is one important point—that is, in tuberculosis of the kidney, there should be a chest examination made before tuberculous kidney is removed.

THE CLINICAL APPLICATION OF EXCRETION UROGRAPHY*

NORRIS J. HECKEL, M.D.

CHICAGO

Urologists have long recognized the need for a different method than that of retrograde pyelography for visualization of the urinary system. They were particularly desirous to develop a procedure which would give a better conception of the physiology and physio-pathology of diseases in the urinary tract, and at the same time eliminate the necessity for the catheterization of the ureters. Toward this end scientists for the last twenty-five years have devoted much effort.

In the summer of nineteen hundred and twenty-nine, von Lichtenberg and Swick obtained successful pyelograms from the intravenous injection of uro-selectan prepared by the chemists, Binz and Rath. This solution met all of the requirements for excretion urography. It was well tolerated, produced only mild or practically no reactions and gave good visualization of the urinary system. Since the discovery of uro-selectan, other similar chemical compounds have been developed and are used with even better clinical success.

This new method has not only simplified the procedures necessary in urological examinations, but has also brought forth new conceptions of the physiology and pathology of diseases in the urinary system. It has given us new ideas in the interpretation of the disturbances of the urinary tract.

In order to correctly interpret these new

conceptions, it must be recognized that the fundamental principles of excretion urography are entirely different from the principles of retrograde or instrumental pyelography. This fact can not be too strongly emphasized. The new method is a physiological one. It involves the principles of kidney excretion. The old method — instrumental pyelography — is a purely anatomical one and interprets diseases of the urinary organ only from anatomical changes. Excretion urography, however, reveals not only anatomical alterations, but principally physiological disturbances; hence,



Figure 1. Bilateral pyelectasis, secondary to prostatic obstruction.

the urinary system is visualized as a unit from which new conceptions of associated pathology and physiology have been recognized.

Many of the false interpretations that were earlier made in excretion urography, were due to erroneous conclusions based on the inability to interpret these physiological disturbances because an attempt was made to construe anatomical changes from physiological alterations. Likewise, some investigators claim they have observed a failure of normal kidneys to eliminate the solution. Such a deduction would be

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against the principles of physiology and kidney excretion. In normal kidneys with hyper-tonic activity and especially if the x-ray is taken during a systolic phase, poor visibility may be obtained. Therefore, the observations of these investigators can only be construed as errors in interpretation.

To obtain better anatomical visualization of the upper urinary tract, many authors have advocated the routine use of various devices to compress the ureters. Obviously, such a procedure disturbs the normal motility of the urinary system and may lead to false interpre-

relative merits of the two methods, because their principles are entirely different. It would be more logical, to consider excretion urography as a new method which we can add to our armamentarium to aid us in a better interpretation and diagnosis of urinary diseases. To illustrate these principles, pyelograms of the more common urinary diseases will be discussed. The first two will illustrate the adaptability of excretion urography in obstructive diseases. From this group, we have acquired many new conceptions and ideas of physiology and associated pathology. For example, the



Figure 2. Absence of visualization, due to extensive kidney damage from prostatic obstruction. Note the marked dilation of the right lower ureter.

tations. Any artificial method which interferes with normal physiology, would be against the principles of excretion urography. Compression devices should only be used, therefore, in those instances where it is more desirable to obtain anatomical changes than physiological disturbances, such as in tumors of the upper urinary tract.

In the earlier period of the development of excretion urography, many clinicians regarded this method as a rival of instrumental pyelography. It would be difficult to evaluate the



Figure 3. Right hydronephrosis, secondary to an acute prostatovesiculitis.

disturbances of the upper urinary tract from obstruction at the bladder neck, such as in prostatism, have long been recognized. These disturbances, however, could previously be interpreted only from anatomical changes and then only in a relatively small number because of the inadvisability in many instances of retrograde pyelograms. Therefore, in this particular group, excretion urography has been a welcome development.

Figure 1, represents a patient who had an enlarged prostate with a chronic retention of urine. The excretion urograms show a good

visualization of the urinary system. Both pyelograms reveal a bilateral pyelectasis and a clubbing of all the calyces. The ureters can be visualized through their length. They are atonic and dilated. There is no evidence of peristalsis. It should be mentioned that normal ureters are never completely visualized. The cystogram shows an enlarged bladder. From this fifteen-minute film, one would interpret the function of these kidneys as fairly good in spite of the ascending bilateral pyelonephritis, secondary to benign prostatic hypertrophy. In obstructive cases where stasis

of the bladder. The lower part of each ureter is visualized and is markedly dilated and enlarged. We see no solution in the kidneys. The fact that there is no visualization of the kidneys does not necessarily indicate that the method is a failure. On the contrary, it may reveal valuable information. Excretion urography must fail to give visualization in those cases where kidney function is impaired. In this case, infection superimposed on kidney damage was the cause of the disturbed function.



Figure 4. A stone in the left ureter, producing an incomplete block.

is present, one must be cautious in interpreting kidney function on the basis of visibility alone. There is a tendency to over value the function. So from this picture, we see the physiological disturbances of the upper urinary tract from the pathology in the lower part. This method teaches us to appreciate to a greater degree, system pathology.

Figure 2 is also from a patient who had a marked retention from an enlarged prostate. He had a blood pressure of two hundred and thirty-five systolic and a bad myocarditis. The excretion urograms show only a faint outline



Figure 5. Dilation of the right kidney pelvis, from an acute pyelonephritis.

In the acute inflammatory diseases of the lower or upper tract, excretion urography has added much to our information. It has given us a better appreciation of the extensive disturbances which may happen to one part of the urinary system from a disease in another part.

In Figure 3, the right pyelogram shows a rather large hydronephrosis. The left is normal as is also the cystogram. This patient had severe attacks of recurrent chills and fever from an acute prostatitis-vesiculitis.

In calculi of the urinary tract, excretion urography is well adapted. A fairly accurate interpretation of kidney function can be obtained and in ureteral stones in which catheters can not be passed, excretion urography has added much information in the studies of the diseased side above the obstruction.



Figure 6. No visualization of the left kidney, due to a hypernephroma.

Figure 4 is from a patient who complained of left renal colic and had gross hematuria. No stone shadows were seen in a plain plate of the genito-urinary system. However in the excretion urograms, there is a calculus in the middle part of the left ureter which is producing a partial obstruction. The ureter above the stone is markedly dilated. There is a moderate hydronephrosis with clubbing of all the calyces. The function of this kidney is, however, not much disturbed. The right pyelogram is normal. The information revealed from this picture is all that is necessary for diagnosis and besides, a fairly accurate conception of the kidney function is obtained. In cases where stone produces a complete block, there would be no visualization of the solution on that particular side.

Because of the simplicity of administration, excretion urography in children has been a

welcome aid in the study of the upper urinary system. Figure 5 shows a dilatation of the right pelvis with slight clubbing of the calyces. This six-year old girl had pyuria, dysuria, frequency and burning. The cystoscopic examination was negative. From these findings, one is justified in making a diagnosis of a pyelone-



Figure 7. No visibility of the left kidney, because of an extensive infection.

phritis of her right kidney. The culture of her urine contained *B. Coli*.

In patients, where, because of technical difficulties, failures or contra-indications, studies of the urinary tract could not be made from retrograde pyelograms, excretion urography has been a welcome development.

Figure 6 is from a fifty-year old man, who had a symptomless and painless hematuria with a palpable left quadrant mass. Previously, several attempts had been made to catheterize the left ureter. The excretion pyelograms show no filling of the left pelvis. The right pyelogram is normal. A diagnosis of kidney tumor was made and confirmed at operation.

Figure 7 also shows an absent left pyelogram. The right is normal. Eleven months previously, the patient had a stone removed from this kidney. Following the operation he had a persistent discharging sinus which failed

to heal. The absent left pyelogram is due to extensive infection of this kidney. It is interesting to note how differently we arrive at our interpretations and deductions from this method in comparison with retrograde pyelography. For instance, in these last two pictures

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Figure 8. Extensive changes in the upper urinary tract, from acute pyelonephritis of pregnancy.

disturbances of physiology are the important considerations and not anatomical changes. In both of these cases, retrograde pyelography failed to give the information.

There are many instances in which one hesitates and is doubtful about the advisability of making retrograde pyelograms. In such cases, excretion urography may give us all the information which is desired. Figure 8 shows a marked bilateral dilatation of both pelves and calyces in an eight-month pregnant woman who had marked urinary symptoms, with a temperature which varied from 102° to 104° .

Figure 9 illustrates the use of excretion urography in the diagnosis of lower tract pathology. It shows a small diverticulum of the bladder which was an incident finding in a patient with bladder-neck obstruction.



Figure 9. Showing a diverticulum on the left side of the bladder.

WHAT OLD PEOPLE OWN

The National Civic Federation quotes the following figures obtained by questioning 14,815 persons over 65 years of age:

- 29.6 per cent. owned no property.
- 8.4 per cent. owned up to \$999.
- 5.1 per cent. owned \$1,000 to \$1,999.
- 5.2 per cent. owned \$2,000 to \$2,999.
- 9.2 per cent. owned \$3,000 to \$4,999.
- 10.6 per cent. owned \$5,000 to \$7,499.
- 6.1 per cent. owned \$7,500 to \$9,999.
- 25.8 per cent. owned \$10,000 or over.

This was also found:

- 40.3 per cent. had incomes under \$1,000 a year.
- 24.0 per cent. had incomes of \$1,000 to \$1,999.
- 16.5 per cent. had incomes of \$2,000 and over.
- 19.2 per cent. had no annual income.

Life insurance carried by the men interviewed:

- 1 out of 100 had \$10,000 or more.
- 21 out of 100 had \$1,000 or more.
- 45 out of 100 had no life insurance.

—The Insurance Salesman.

THE USE OF SODIUM AMYTAL IN MYOCLONIC ENCEPHALITIS*

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Encephalitis lethargica or epidemic encephalitis is one of the three important acute infections of the central nervous system. The others are cerebrospinal fever and acute poliomyelitis. Encephalitis is the newest from the standpoint of clinical interest yet according to Crookshank¹ there is some evidence "that epidemics of a disease presenting characteristic features of encephalitis lethargica have occurred from time to time in Europe during the past 450 years."

Clinical types of encephalitis are many as shown in the complete review by Riley². Any part of the central nervous system may be involved. The disease is characterized by an acute inflammatory reaction with hemorrhagic foci in areas more markedly affected. Peripheral nerves may likewise show changes in this disease though for all practical purposes it can be designated as an affection chiefly of the brain and to some extent of the cord.

The pathological picture is summarized by Buzzard and Greenfield³ as showing, 1. vascular congestion, 2. evidence of toxic degeneration of the nerve cells and neurophagia, 3. proliferation of the mesoblastic cells of the vessel walls and infiltration of the nervous tissue with these cells, 4. glial proliferation.

Post-mortem examinations frequently show the lesions most marked in the basal ganglia and mid-brain though by no means limited to these areas. Many of the characteristic clinical features are explained by such localization. Vascular changes or hemorrhagic foci occurring in the basal nuclei with resultant affection or destruction of important nerve centers cannot help but cause profound changes in capacity for functions which have their origins, correlations or associations grouped there.

Many patients who survive the acute onslaught are apt to show effects of these changes as residuals which may appear at once or develop gradually. A process seemingly quiescent even over a period of years may be lighted up. Most authorities consider this due to survival

of the infecting agent which continues to set up reactive inflammatory processes with resultant clinical symptoms. Activity of the virus may be held in check by gradual development of some sort of immunity, either general or local tissue type. Presence of an acute intercurrent infection of another sort or other causes may lower such immunity, thereby releasing the virus activity for extension. Thus an apparent recurrence of the encephalitic symptoms appears.

Clinical classifications of acute epidemic encephalitis are many. Most of them have to do with the involved anatomical divisions of the central nervous system or the characteristic neurologic features of the subheading. The late stages are grouped largely under headings describing the more prominent subjective or objective findings. Parkinsonian states, respiratory disorders, oculo-gyric crises, excitomotor phenomena include some of the more prominent descriptive titles for late effects. Mental changes, particularly conduct disorders in young individuals, present very formidable clinical and social problems but do not come within the scope of this paper.

Excito-motor phenomena are of special interest in the study of the physiology of the nervous system. Complicated movements are normally performed often without conscious effort. Muscle tonus, reflex activity, coordination of impulses from within and without through the lower centers of the brain stimulated or inhibited to the proper degree by higher areas take care of this. When, as a result of disease, something happens to the lower or the higher centers many things may occur. There may be abrupt and violent discharge of energy accompanied by loss of consciousness i.e. convulsions. There may be loss of volitional control i.e. paralysis. There may be wish to perform the movement but misdirected effort i.e. athetoid movements. There may be an impelling need, an over-stimulation from above and absence of coordination i.e. choreiform motions. Impulses may arise calling forth regular slow or rapid muscular contractions often rhythmic in character and which the individual knows he is performing but is incapable of controlling i.e. myoclonic movements.

The excellent monograph of Gabrielle Levy⁴

*Read before the Section in Medicine, Illinois State Medical Society, Peoria, Illinois; May 17, 1933.

gives detailed descriptions of excito-motor phenomena in the late stages of encephalitis. Her classification of these phenomena includes choreiform movements, bradykinesias, isolated tremors and myoclonic movements. Hall⁵, von Economo⁶ and many others have studied cases with myoclonic movements so that this type in both the acute and chronic stages is one of the well recognized forms of the disease. Sicard⁷ gives the following description of movements in myoclonic encephalitis, "Muscular jerking sometimes rapid, explosive, of electrical rhythm; sometimes more slow which seizes on the musculature of the extremities, of the face and the diaphragm, sometimes localized in a segment of the body, frequently in the abdominal and diaphragmatic region, rather often with a tendency to generalized involvement. It is not a question in the pure type of spasm, contracture or true chorea but of veritable myoclonic jerkings striking a muscle or a group of muscles and not accompanied by fibrillary contractions."

The case to be reported here might be grouped in the clinical classification under several headings. Placement could be made depending on time seen as acute, then as hemiplegic, then myoclonic, then as choreiform, etc. However, through it all the myoclonic element has appeared most constantly even though at certain stages this element was temporarily in the background.

A white male, bus driver, aged twenty-six years, was first seen February 16, 1929. He reported that one year previously he had an acute illness with drowsiness, headache, stiff neck, and then developed weakness of the left side. The duration of this acute illness was fifteen weeks. When first seen there were rhythmic movements of the left upper and lower extremity, sluggish pupils, increased deep reflexes on the left and a moderate speech disturbance. Blood and spinal fluid Wassermanns were negative though the spinal fluid showed moderate pleocytosis and positive globulin tests. The movements were increased under emotional tension or with fatigue. A diagnosis of the chronic stage of encephalitis of the myoclonic type was made. When the headache became more severe, the movements more marked or general slowing up of physical and mental activity more pronounced, spinal drainage produced quite prompt relief for a while. Four such drainages were made over the period of time from first observation until the spring of 1931. Iodides and bromides were the only drugs used. In March, 1931, this patient contracted an acute upper respiratory infection of the influenzal type.

The infection itself was mild but the effect on the central nervous system was pronounced. The myoclonic jerkings became more marked. The patient was more dull though fully conscious at all times. It became increasingly difficult for him to articulate. Neurological findings were unchanged. Spinal drainage at this stage appeared to accentuate rather than relieve the symptoms so that twenty-four hours after the drainage the picture had changed to show more the choreiform type of movements so far as extent and vigor of the reaction was concerned. The right side of the body became involved in the same type of motion. Acts of swallowing, speech or any coordinated movement were practically impossible to perform. Sedatives such as bromides, chloral, paraldehyde, morphine and hyoscin were apparently without effect in the next twenty-four hour period. Exhaustion was developing. Tube feeding was necessary. Dr. F. P. Norbury saw the patient in consultation at this time and stated that these were the most marked myoclonic movements he had ever seen. It was evident that unless rest could be secured general collapse was imminent.

Sodium iso-amyl-ethyl barbiturate or "sodium amyltal" had since its introduction been of value in several cases of chorea major. It was decided to use it for this patient. Five cubic centimeters of the ten per cent. solution given intravenously produced the first rest he had for almost seventy-two hours. This dosage may appear small but it must be recalled that quite large doses of other sedatives had been given within the previous twenty-four hours without result. Several hours sleep were secured during the next twelve hours and fluids were administered by nasal tube and intravenously. When the effect of the drug had worn off there was a gradual return of movements which were interesting to watch. They commenced as the mild myoclonic jerkings seen early in the observation of the patient, gradually increasing in crescendo fashion over a period of hours until they were almost as marked as ever. Another injection of eight cubic centimeters was given eighteen hours after the first with prompt subsidence of motion. No further injections were used as the drug has been given orally from that time to the present save for a few test interruptions. The oral dosage was at first twelve grains a day, then six daily and now three grains every day or two.

Test interruptions of administration have been made at intervals. The first of these was one month after the acute reaction described above. There was a prompt increase of movement within twenty-four hours of discontinuance. Another day showed quite marked myoclonic jerking of the type previously observed so the drug was resumed. The next, two months later, when the dosage was six grains daily brought about moderate return of symptoms within forty-eight hours. Occasionally this man is without medication now. He notes no difficulty in sleeping but states he is conscious of greater difficulty in performing finer coordinated movements such as writing or drawing after two or three days away.

The problem of tolerance as well as addiction has, of course, to be given serious consideration. The patient has been under quite close observation. Fortunately his cooperation and that of his family has been complete. He has made a very satisfactory improvement and has been at work on a farm for the past year. He has no difficulty in driving a car or tractor or in doing general farm labor. His mental faculties are more keen than when first seen. The dose of drug has not had to be increased but on the contrary has been reduced. The fact of making an individual apparently hopelessly invalided once more a producer appears to justify continuance of administration.

Observations on the case here reported have been supplemented by study of two others. Production of sleep was used in both at first to secure rest. After this, however, myoclonic movements were controlled in the dosage used without resort being had to somnolence. Similar effects have been noted in two cases of Parkinsonism more recently studied, though drowsiness was a feature with the drug. One choreiform encephalitis responded better to control with this preparation than others used during a short period of study.

Sodium iso-amyl-ethyl barbiturate introduced for general anesthesia by Zerfas, McCallum and their associates⁸ is used for many purposes in addition to its original application. Bleckwenn⁹ has reported on its use in psychiatric conditions. He produced sleep in many patients of various types, studied their reactions from a clinical and psychological standpoint during and after the narcotizing influence of the drug. His reports are valuable guides to those intending to use this preparation for such purposes and have been very helpful.

Commercial preparation of capsules of the drug for oral use has broadened its field of employment. As a soporific it has definite effects and a definite place. There are instances, however, in the practice of many physicians where its injudicious use by patients, particularly neuropsychiatric patients, is accompanied by unfavorable results. Consequently it should be prescribed judiciously and with a knowledge of its pharmacological effects.

Drugs of the barbital series to which this preparation belongs have their primary, in fact almost their only, action on the central nervous system. Substitution of allyl, amyl, phenol or other groups for one or more of the ethyl radicals of the basic preparation appear to

enhance their activity. These various combinations have various trade names according to the ingenuity of the chemists who prepare them and the manufacturers who make them available to the profession. Correlation of chemical constitution with effect, and localization of action of these preparations is a field unto itself. In general it may be said that they act to diminish the irritability of the cells of the brain and spinal cord. More particularly they affect the higher centers having to do with consciousness as sleep, narcosis or anesthesia produced by their administration destroys consciousness.

That other centers, particularly those having to do with coordinated movement, are also affected is readily observed by anyone who has seen patients taking preparations of this series.

No conclusions in the case here reported and the others mentioned can be drawn without experimental and pathologic bases to back them up. It is suggested, however, that in these cases of hyperkinetic encephalitis sodium iso-amyl-ethyl barbiturate (Sodium Amytal) appears to act on those areas of the brain having to do with excito-motor phenomena.

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THE ROUND TABLE

Around the festive board is found
A group of keen, congenial souls,
By ties of mutual interest bound
Of science, art, linguistic roles;
But strongest tie and best of all,
The bonds of friendship each enthral.

W. A. NEWMAN DORLAND

THE VALUE OF ERADICATING TUBERCULOUS MASTOID AND MIDDLE EAR DISEASE IN PULMONARY TUBERCULOSIS*

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CHICAGO

Because of low body resistance, surgery in a patient with active pulmonary tuberculosis has always been looked upon as a grave procedure, and the fundamental principle of treatment followed was the general building up of the protective body forces to combat the disease. However, during the past years, physicians treating tuberculosis have accepted the value of surgical procedures like thorocoplasty, gas-injection, phrenico-exeresis, as well as surgical eradication of joint tuberculosis. Even lobectomy has been attempted with success. In otolaryngology, patients derive great benefit from such procedures as cauterization, epiglotomy, and superior laryngeal nerve resection in cases of laryngeal tuberculosis. The institution of the radical mastoid under local anesthesia in the eradication of tuberculous middle ear and mastoid disease which I have now practiced for the past 3-4 years, as a routine measure, is a further step in the control of tuberculosis. The removal of such a focus in the mastoid, which has primarily added to the depletion of the recuperative forces of the body from an already existing lung tuberculosis is a most deciding factor in the prognosis of the lung disease.

The cases which I call to your attention are those of chronic tuberculous middle ear and mastoid disease with more or less advanced pulmonary disease, in which the radical mastoid operation has resulted in a cure of the local focus and has brought about a marked general improvement. They are not the cases which demanded operation because of a subperiosteal abscess, facial paralysis, fistula, cold abscess or intracranial complication. To the casual observer they merely presented a painless, discharging ear and the complaint of deafness. Because of such an apparent innocuous condition physicians have become negli-

gent and disinterested in its study. They have been unaware of the marked destruction which lies masked within the skull. Here then we have a grave tuberculous focus which unlike that of the lung can be removed by safe surgical measures with great benefit to the patient. A patient who fares badly after such a local radical mastoid operation will neither survive his lung infection. Those who adhered to contraindications for operation were unaware of the existing pathology and have not considered the value of local anesthesia.

Tuberculosis of the middle ear has been recognized and described as a definite entity before the discovery of the tubercle bacilli by Koch in 1882. It was Wilde¹ in 1853 who was the first to give it clinical recognition. Politzer² soon followed with some histo-pathological and clinical studies of middle ear tuberculosis.

The clinical picture and course of middle ear tuberculosis is characteristic. On close examination the earliest symptom is most often fullness in the ear and deafness but the occurrence of the discharge with its painless onset is the most frequent complaint. This absence of pain is characteristic of all tuberculous osteomyelitis, before the advent of mixed infection. When pain accompanies tuberculosis of the middle ear it is nearly always due to a mixed infection, and the amount of pain is proportionate to the amount of this added pyogenic infection. Tinnitus has been described as the first complaint in a case reported by Robinson.³ My observations are fully in accord with those of Sir St. Clair Thomson⁴ who has had a vast clinical experience in tuberculosis of the ear, nose and throat. He states "In all cases the most striking symptoms are the absence of pain, fever, or free discharge. The patient first complains only of deafness or a dull sensation in his ear. The early and rapid onset of deafness is very marked. It may even happen that the first thing to attract the patient's attention is some moisture or a slight discharge. There is throbbing, distention or tenderness."

An essential feature is the chronicity of the aural discharge. It may be watery, but more often it is curdy, thick, creamy and pultaceous, but never blood stained. The discharge has a sickly or fetid odor, and forms a thick pultaceous, gray-yellow, often semi-translucent film against the drum membrane, concealing

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its landmarks. The perforation of the drum is often filled and concealed by a thick, white curdy or translucent discharge from the middle ear. As a rule the discharge is not profuse, unless there is great destruction of the temporal bone.

The appearance of the drum varies at different stages. Thickening and injection of the drum membrane with obliteration of all landmarks may be observed very early. In a week or ten days the appearance of one or two tubercles, which are pathognomonic, may be seen. That multiple perforations, as described by most authors, can occur is without question, but I have seen it in only two cases, even after observing and following many cases from the very beginning. St. Clair Thomson⁴ has observed double perforation only twice in his series of 25 cases. Leegard⁵ in a report of 25 cases observed multiple perforation only once, while in 180 non-tuberculous cases it was observed 5 times. Others have seen multiple perforations more often in tuberculous ears, but it is not the rule. Such multiple perforations if they are to be seen must be observed early, before they coalesce into one large single perforation as is usually seen clinically. It may be well here to draw attention to the fact that multiple perforations occur in syphilis as well, and further, that tuberculosis and syphilis often occur together. The single perforation varies in size and location and is very often peripheral, depending, I presume, on the severity and duration of the infection, the previous condition of the ear, whether the infection is by way of the blood stream or Eustachian canal, as well as the effect of any secondary pyogenic contamination. Of course practically all cases in adults are the result of direct extension via the Eustachian tube from infected sputum. In children there seems to be good evidence that some cases are of hematogenous origin.

Regarding the pale flabby granulations described as characteristic of tuberculous involvement in most texts, I believe, are over emphasized. There is no question that they may be observed frequently, but often we find no marked granulation reaction and at times these are injected instead of pale and flabby. These variations are the result of virulence, type and length of time of infection, as

well as other factors as secondary pyogenic invasion.

The frequency and significance of facial paralysis has also undergone revision. I do not believe that it is more frequent in tuberculosis than in the pyogenic infections of the middle ear and mastoid of the adult, but when it occurs with a painless onset of a discharging ear and rapid deafness, it firmly confirms the diagnosis of tuberculosis. In all my adult cases, many of old standing, I have observed this phenomenon only once in spite of the marked mastoid involvement in many of these patients. Leegard⁵ encountered facial paralysis not once in 25 cases. He believes that it is to some degree characteristic of grave cases, but in general this sign is not common; and therefore is more significant as regards prognosis than in diagnosis. Facial paralysis is more frequent in infants and children, because of different anatomical relationship of the facial nerve.

One of the most important symptoms of tuberculous involvement of the middle ear is the early and rapid decrease in hearing. In the beginning this deafness is of the conduction type, but soon the perception element becomes evident. One is struck with the disharmony between the marked deafness and length of time and severity of the infection. Functional testing will reveal marked conduction and perception deafness. However, because of the gradual invasion into the inner ear we see no acute labyrinthine storms with its spontaneous nystagmus and ataxia. Rarely we note a history of marked tinnitus and vertigo. Pathologically these symptoms can often be accounted for at operation or at post-mortem. Some of these cases show marked thickening of the promontory at operation. Logan, Turner and Fraser⁶ have found necrosis in the labyrinth in a large proportion of cases operated on in their clinic, but I have not met this necrosing form of tuberculosis. Others have reported similar findings. The invasion of the labyrinth as pointed out is always the result of direct extension from the middle ear.

Whenever there is marked invasion of the middle and inner ear the possibility of a fatal tuberculous meningitis arises. That this does occur without or following a mastoid operation

is evident from some reports, although I have not encountered such a complication. Thus Logan, Turner and Fraser⁶ have encountered tuberculous meningitis in 2 or 5% of their operative cases and Cox and Dwyer report non-operative deaths from tuberculous meningitis in 2 of 25 patients with aural tuberculosis.

However, these complications do not establish a contraindication for a radical surgical mastoid eradication of the tuberculous temporal bone, which if left disregarded will continue and kill the patient through a focus of toxic absorption or by direct extension into a fatal meningitis, whether tuberculous or mixed. Further, the fact remains that in all my cases except one there was a healing of mastoid wound and cavity and a marked gain in the general health. The one case that died several days following the operation had a very marked involvement of both lungs and was rather acutely ill. It was a heroic effort to eradicate his accessible mastoid focus. The possibility of meningitis is, as I can see, no greater than in any other type of mastoid infection, and it appears that the frequent fibrous replacement of the labyrinth is a safeguard against meningitis through operative jarring. When sequestra or fistula of the labyrinth are found their removal may be precipitated by a fatal meningitis, but I would not disturb these were I to find them, since nature will do the work slower but safer under such circumstances.

Although the above clinical picture and findings in a patient with active pulmonary tuberculosis establishes a clinical diagnosis of tuberculosis of the middle ear the finding of the tubercle bacilli removes all doubt. A positive direct smear was found in most of my cases, but it must be remembered that the absence of such positive smears, which is often difficult to obtain, does not constitute proof that the case is not tuberculous. Even the culture from the secretions demands special media and guinea pig inoculation is often inaccessible. The great frequency of finding such positive smears is no doubt due to infected sputum in these open pulmonary cases passing along the Eustachian tube. Where the secretions fail to show a positive smear or where one is confronted with a superimposed pyogenic infection, the diagnosis must be decided upon by the clinical findings alone. X-ray of the

mastoid may give valuable information as to the type of mastoid and extent of destruction.

In establishing a general rule to perform a radical mastoidectomy under local anesthesia in all tuberculous middle ear and mastoid disease, I am not unaware of the literature of others, propounding the value of such local measures as heliotherapeutic, tuberculin injections, etc. One cannot belittle their value in certain cases but I cannot see how a ray of light thrown down a narrow canal, or a few drops of solution can cure such a disease, especially when the process usually extends beyond the confines of the middle ear, and which is being fed by bacilli by way of the Eustachian canal. Because of these facts the complete removal of diseased bone by a radical mastoid operation is therefore the judicial treatment.

The preparation of the patient consists of simply giving 3 grs. of sodium amytal the evening before, on the morning following, and again an hour before the operation, together with morphine and atropine subcutaneously a half hour before the operation. For the local anesthesia 1:1000 nupercaine with adrenalin was used. The infiltration extends all around the pinna and mastoid as well as into the posterior canal wall and pre-mastoid space. There is no pain until the middle ear is exposed which is controlled by a 10% cocaine pledget for a few minutes. Under these circumstances shock is reduced to a negligible role.

The classical radical mastoid is performed, using a simple Bondy flap. Postoperative care consists of removing the packing after 7 days and then daily irrigations with Dakin's solution, followed by drying out with alcohol and insufflating iodoform or boric-iodine powder. Granulations are kept down by a silver nitrate stick. Epidermization, and healing of the posterior wound ensues with the usual regularity. Infrequently there persists a raw surface around the Eustachian tube which is often diseased as well. But in spite of demanding protracted cleansing the enclosed focus of tuberculous mastoid disease has been eradicated.

May I state again in conclusion, that tuberculosis of the middle ear and the mastoid is an indication for radical eradication of the diseased focus in a patient with active pulmonary tuberculosis. Such a procedure removes

a vital accessible focus which is a great detriment to the patient and its eradication removes the possibility of fatal intracranial complications and allows the patient to conserve his strength to combat his lung infection. Without it the chances of recovery are tremendously reduced or impossible and it is illogical to subject the patient to an unduly protracted sanitarium regime without the recognition that a tuberculous mastoid is of vital import in the prognosis and treatment of the tuberculous patient.

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DISCUSSION

Dr. John E. Mulsow, Milwaukee, Wisc.: I am sure we all appreciate Dr. Muskat's scientific work in the eradication of these foci of infection. I am fully in accord with his findings. However, I believe that preliminary exhaustive local and constitutional treatment to stop a chronic discharge, such as is done previous to any operation, should be instituted. This having been done with no result, the radical mastoid operation should be considered in certain selected cases. I have in view a quiet case, a moderate pulmonary tuberculosis or a fibroid phthisis. The foci of infection could be removed under local anesthesia and the operation done with comparatively little shock or hazard to the patient, where indicated. However, I do not believe that the operation is advisable in any patient who is acutely ill, or where the patient is losing weight rapidly, running a temperature and having night sweats. I am reminded of two patients on whom operation was deemed inadvisable, but was insisted upon with fatal results, both patients developing an acute miliary tuberculosis.

The early symptoms, such as a sensation of fulness, deafness and tinnitus, must be first definitely differentiated from syphilis, as I have seen a number of cases with one or all of these symptoms which turned out to be luetic and responded to anti-luetic treatment. One must exclude syphilis even in the presence of tubercle bacilli.

In over 1,500 cases in our clinic we have rarely seen the classical picture of middle ear tuberculosis. We have resorted to taking smears but have never found the tubercle bacilli. They would be found mostly in the course of sanatorium treatment.

Regarding the pathological involvement, Politzer stated that in one-third of the patients with chronic tuberculosis of the mastoid, the labyrinth was involved. Ruttin states that a patient seldom dies from a tuberculosis of aural origin. The dura may be covered with tubercular granulations and he has seen cases with granulations extending into the middle fossa, where death was not due to tubercular meningitis. He believes tubercular meningitis usually results through the blood stream and not by direct extension, except in cases of labyrinth fistula. Theising injected virulent bacilli intra-arterially into guinea pigs and rabbits, and found that tuberculous lesions were produced in the temporal bone and in the middle ear, which corresponded to those found in human cases at autopsy. In some, both the bone and mucous membrane were involved. In the experimental animals the lesions represented a much more massive infection than in human cases, yet the general resemblance in the nature and distribution of the lesions was striking. The human material studied consisted of the temporal bone and middle ear of fifteen cases (twenty-five temporal bones) of tuberculosis involvement of the mastoid. From his studies he concludes that middle ear tuberculosis is a blood-borne infection, that it is primarily a bone involvement with secondary involvement of the mucosa. However, we know that the middle ear can be first affected by way of the Eustachian tube.

I do not believe that physicians mean to neglect a chronic mastoiditis in tuberculosis, rather the belief has been that a chronic otorrhea is considered more or less a benign condition, which would improve as the condition of the patient improved, such as has occurred in a large number of patients under various forms of conservative treatment—heliotherapy, etc.—whereas we know that a chronic purulent focus retards or prevents the recovery of a tuberculosis patient. There can be no doubt that the operation, with the removal of the mastoid foci of infection where indicated, has improved the general condition of the patient. This has been shown by numerous observers—St. Clair Thomson, Logan, Turner, Fraser, Leegard, Dwyer & Cox, Muskat. It should only be done where the patients have been under observation and conservative treatment in a sanatorium and where there is no progressive loss of body weight. The condition being a chronic one, the operation is not necessarily an emergency.

Every sanatorium should have an experienced otologist, at least in a consulting capacity, for diagnosis and treatment of the ear, and these patients should be under his care and supervision.

Dr. C. D. Thomas, Peoria: I do not wish to discuss this paper, merely to ask the essayist, also Dr. Mulsow, whether they have observed in these patients a condition that has bothered us. It seems that they have a decided tendency toward an over-production, beyond the usual chronic mastoid case, of cholesteatoma. It seems to me that that bothers us more in our cases than any other symptom. I would like to know if they have made any such observation.

Dr. H. L. Ford, Champaign: Some time ago I re-

member that Dr. Levy of Denver mentioned the fact that he had observed numerous painless perforations in tuberculosis of the middle ear. Do I understand that these occur in the early stages rather than later? I would like to know also what Dr. Muskat thinks of a modified radical operation in a child of 10 or 12 years of age, if consistent with the pathology found at the time of operation.

Dr. G. E. Hartenbower, Bloomington, Illinois: I am particularly interested in Dr. Muskat's reference to the convalescence of these patients. We have had a case under observation for several years which we have always considered to be tubercular. This patient has been operated on three times by competent men, and the mastoid wound heals but sooner or later breaks down, particularly when the patient's resistance is low. This wound behaves very much like one in a diabetic patient if the blood sugar is not kept within normal limits by insulin or other means. This patient shows no diabetic symptoms, however. She has submitted to removal of a tubercular kidney but has never been diagnosed as an active pulmonary case. I would like to ask the essayist if he has any similar post operative experience?

Dr. Irving Muskat, Chicago (closing): I appreciate all the discussion, especially that of Dr. Mulsow. In answer to him I may say that there is no doubt that in certain cases there should be a selection, depending of course on the general condition of the patient. For example, if you had a chronic case that under sanatorium regime was getting on well, the general physical condition, the weight and the appearance improving, and you had an ear that is discharging, one may wait for spontaneous healing. However, all of the cases I had an opportunity to see were in a sanatorium and were practically all open cases of pulmonary tuberculosis. These ears were discharging for periods from two weeks to several years. There seems to be a relationship between the time of infection and the amount of destruction. The amount of destruction in these mastoids is often amazing, destruction which you would not expect from the symptoms or clinical findings. Most of these patients are doomed anyway, from their pulmonary disease, and if you do not operate on them you remove a chance for the body to recuperate because of the added ear focus.

One case with a chronic discharging ear was in the sanatorium long before I got there. I decided to operate. He had not made much improvement under the general regime. I opened the mastoid, and I have never seen such widespread destruction.

I see no more reason for shock than in the thoracoplasty which is frequently done on pulmonary cases, or other operative procedures, as in a tuberculosis of the knee for instance. Rest will not give the desired result, as in other conditions, where we give bodily rest and proper food and let nature take care of it. But nature will not do that here. Most of these cases have wide destruction.

I do not mean to be dogmatic in the indications for mastoidectomy in tuberculosis of the ear. All these patients who are open cases of tuberculosis in a sana-

torium are usually on the down grade. Under rest and care they may be on the upgrade for some time, but they will not recover without surgery. A case with a large focus of infection in the mastoid with added pulmonary disease does not tend to get better without mastoidectomy. However, if a patient has a chronic fibroid type of tuberculosis and is on the upgrade and has a discharging ear, I do not think I would operate.

There is no doubt that some of these cases are syphilitic, although not frequent. Tuberculosis and syphilis are very often associated, but the history and clinical findings will differentiate them. Regarding blood-borne infection, I believe it has been definitely proven that in an adult practically all infection is via the Eustachian tube; in infants there is more positive evidence that some of these conditions are hematogenous in origin. In fact, we see some cases where there are no lung findings, but a tuberculous mastoid infection. Regarding positive bacilli, I might state that even if we do not find the tubercle bacilli on direct smear, the history of the case and a negative Wasserman test leave little doubt that the middle ear and mastoid disease is tuberculous. Of course the special media cultures and guinea pig inoculations make the diagnosis absolute. I have not seen meningitis in any case, though Logan, Turner and Fraser and others have reported some. I do not believe that is an issue. Even if it were, operation would avert rather than precipitate tuberculous meningitis. I have not seen cholesteatoma in these cases. There is sometimes marked necrosis, often extending to the dura. Often we see a bluish color of the mucoperiosteum of the mastoid cells. Some of these cases with infection had sclerosis, and if one should find such a mastoid a modified radical would be suggested, instead of the radical mastoid. The indication for a modified radical would be of course to save the hearing.

The healing goes on just if you had a pyogenic case. In most of the cases where you have a marked tuberculous infection you can expect healing. In most cases where the patient's condition has been stationary, a radical mastoid has improved the condition. I have had two or three deaths since this paper was prepared, but I consider that the radical mastoid is of great benefit to the patient with pulmonary tuberculosis, and gives them the added chance for health. It therefore is as important as a thoracoplasty or any other surgical procedure which tends to obliterate a focus for the benefit of the general health.

MEDICAL ORGANIZATION IN INDUSTRY*

DON DEAL, M.D.
SPRINGFIELD, ILL.

The subject is so inclusive that I am able only to generalize. Industry has opened up

*Read before the Section on Public Health and Hygiene, Illinois State Medical Society, Peoria, May 17, 1933.

what is perhaps the most promising single field for medical service. This is true for a number of reasons. Industrial workers make up the largest occupational element of the population, about one-third of the people. With their families they probably embrace well over one-half of the human resource of the nation. Employment in industry involves a large and growing number of risks and hazards to health and limb, which are a part of the industrial environment. Highly mechanized processes require employees with skill, alertness, adaptability and emotional stability. These attributes are not common to all men. Industry must classify employees as to suitability for particular tasks.

In normal times it is important that industrial activities go forward without interruption. Sickness or injury on the part of employees results in loss to both the industry and the worker. An outbreak among a group of industrial workers of any epidemic is exceedingly expensive to all concerned. Illness in a wage earner from whatever cause piles up losses in much the same way that a pebble dropped into a pool creates ripples. Production slows up, thus involving a loss to the employer and to society. Wages cease, causing a loss to the worker and his family and to the merchants and others who find in the employee a consumer. Bills begin to accumulate, moreover, so that the complexity of the situation grows more intricate. Common colds must be studied until rational methods of prevention are developed. Disability from menstrual disfunction must be considered from an endocrine standpoint and relieved. It is estimated that in normal years the loss due to the illness of employees amounts to 300 million days and no less than 10 billion dollars annually in this country. An extension of medical supervision is a distinct forward movement, benefiting society as a whole.

On the positive side industry provides a fertile soil for the dissemination of information concerning hygiene, sanitation and health matters in general. Large numbers of workers are brought together into one organization. Their problems are similar in many respects. They can be reached easily and effectively through the industrial organization.

Medicine, for its part, has to offer a service that will meet the health problems of industry

in a highly effective and profitable way. This has been demonstrated repeatedly. Probably the largest single demonstration of what may be expected of medical service in an occupational group is that of the military forces. During the World War the medical corps probably contributed more than any other single unit of the military organization toward the efficiency and effectiveness of the army and navy. It is a matter of history, that never before as far back as records are kept, were casualties from sickness reduced so low. Only in recent years has the high military command learned to appreciate the extraordinary economy and value of an adequate, efficient medical department.

Industry faces a situation similar in many respects to that of the military. Competition from the standpoint of individuals and business is a continuous battle that will go on forever in some form. It is apt to be more important, in the future, than in the past. That will necessitate low cost production. This will require healthy, efficient workers. The latter depends upon a wise choice of employees and reasonably adequate protection of health after employment.

Under the pressure of economic losses resulting from the enforcement of workmen's compensation law and the stimulus given to preventive medicine by the experiences and observation of officers and men in the army during the World War, some industries have already recognized and taken advantage of the benefits available from the application of scientific medicine to their problems. Physical examination often discloses disability of which the individual is unaware, really giving a diagnostic service. The industrial surgeon must be sympathetic and helpful. Progress in this direction appears to have been made at the expense of the individual, independent medical practitioner. On this point Dr. Cary P. McCord says:

"Actual experience proved that it was not unusual for the frequency of accidents to drop from 75 to 85 per cent as a result of sustained and proper safety activities and medical supervision. The elimination of two-thirds of the severe accidents in industry has yielded enormous savings in insurance premiums and in life and limb. This economic betterment for the manufacturer was in no small degree effected at the expense of physicians in industrial communities. In this splen-

did development the victim, the physician, has no basis for protest."

To utilize medical service to the best advantage industry must recognize and be governed by a few basic principles. First, the medical personnel must be chosen intelligently with respect to professional qualifications, personality and character. Second, the medical department must be an independent unit of the organization, functioning in the closest co-operation and harmony with all other departments but free to perform its duties without subserviency to any other authority. Third, all medical matters should come under the direct supervision of the medical department. Nurses and first aid crews should be guided entirely by a medical officer. Medical supervision has decided advantages in reducing the number of accidents and in preventing minor accidents from being serious.

With respect to the employees all candidates for jobs should be required to undergo a medical examination before employment. This has a two-fold purpose. It will prevent the placement of individuals into jobs for which they are not physically and mentally qualified and in which they would become a hazard and liability to themselves, their fellow workers, the management and the public. It should be used to accomplish preventive procedures for the individual worker and his co-worker. It also will bring to light various defects which may be remedied to the great advantage of all concerned.

After employment, workers should have the benefit of periodic medical examination. This is particularly true of those engaged in occupations that involve definite risks to health, such as exposure to poisoning and to breathing deleterious dusts and gases. It should be a routine practice also for highly skilled personnel charged with the operation of expensive machinery. Upon the judgment and skill of individuals employed to operate machines of this kind depend the safety of other people as well as of the equipment.

Accidents and disabilities that come within the compass of industrial compensation laws are important considerations in industry. Even risks not usually covered by laws, have come to be important factors in this field. In some states rules or laws compel the employer to

supply a minimum medical supervision. Lawyers who are able to give a broad interpretation to their professional ethics have recognized an opportunity to file damage suits involving large sums in behalf of employees. Courts have shown a liberal attitude toward the plaintiffs in these cases. Thus many industries find themselves faced with a serious loss hazard that an adequate and effective medical service alone can improve. In more than three-fourths of the states compensation is allowed in the case of disease resulting from accidental injury and in nearly every state Industrial Commissions or Boards, upheld by the courts, have permitted compensation for disease aggravated by accident.

These considerations suggest the importance not only of industrial medicine but of the quality of the medical service rendered. The industrial surgeon must be a man of transparent honesty, unquestioned professional skill, broad human sympathy and interests, and a man of considerable executive ability. He must be acquainted with the manufacturing and industrial processes involved in the industry which he serves and he must be conversant with the compensation laws and other legal matters that relate to his activities. The Industrial Board has great difficulty in arriving at a just reward. The medical man must cooperate and assist the commission by being frank and honest.

Industrial medicine is a specialty. It requires physicians with special aptitude for that type of work. Even industrial surgeons are specialists in particular branches.

Industrial medicine requires doctors of the judicial type of mind. Only men of unquestioned honesty, unqualified integrity and a capacity to see clearly and weigh accurately the apparently conflicting interests of employer and employe can hope to succeed satisfactorily in the field of industrial medicine. Actually there is no conflict in interest. In normal times the employer, however, is apt to become impatient when workers are off the job. The claim department makes every effort to prevent loss of time that is compensatory. The employe may have a tendency toward malingering. His best interests, however, may require a longer absence from the job than the employe feels is necessary. The medical department must

assume full responsibility to make the decision in these cases. The industrial Department must therefore be supervised by a first-class doctor in order to render satisfactory medical service and he must be endowed with the judicial type of mind in order to handle cases with justice to all parties concerned.

Large industrial concerns have facilities for providing full time and adequate medical departments to serve the organization. Smaller firms or scattered units are compelled to resort to a part-time service. Here medical groups offer a most satisfactory means of meeting the part-time requirements of industry. From the standpoint of the employer or insurance carrier the advantages of the medical group service are important. With a medical organization capable of dealing with a diversity of problems, the group is able to render at one location a maximum of satisfactory service to the injured or sick worker with a minimum delay and the least possible lost time. Advantages offered by the group plan which cannot be duplicated by an individual physician, no matter how competent and zealous, may be summarized as follows:

1. An office open with physician in attendance each day for a period of twelve to twenty-four hours.
2. A member of the group subject to call at all hours of the day and night, regardless of holidays, vacations or other occasions.
3. Attendance of trained nurses.
4. Discussion or consultation on individual cases by the various members of the group. In this way specialized service is rendered without the expense of consultation by specialists and without sending the patient outside the office. The medical legal advantage of having available members of a group experienced in the preparation of cases for trial through broad knowledge of industrial courts and the methods pursued in them.

5. Estimates of disability made without prejudice and with the guidance of qualified specialists.

It is important for those serving small units to see that reports are mailed the day first aid is rendered or examination is made.

The mailing of statements for services rendered at the time the patient is discharged or at the end of the month if desired.

Permanent records of all cases so that they are available throughout the passing years. These records certainly afford exceedingly valuable statistical information.

Regular subsequent reports of all cases remaining under treatment longer than a week.

The business of a medical department in any industry is to provide the highest practicable quality of medical practice, both preventive and curative, and in this way to keep accidents and lost time at a minimum. Its business is never to embark in highly competitive schemes of record making in respect to accidents and lost time elimination. If the medical, sanitary and safety activities are done properly the lost time and accident history of an industry will take care of itself and usually in a satisfactory way. Trying for records usually results in the deplorable practice of cheating in respect to accident reports. Employees with fractured legs are said to have been brought back to places of employment before the expiration of the period of grace in order to avoid reporting accidents. This practice ruins the value of statistics and creates an injustice to the worker, his fellow employes and the company and reflects no credit on the honor and integrity of the medical profession. It is believed that medical departments in some of the large industries have gone in for the record making mania and have indulged in sharp practice to a degree that falsify their accident and lost time statistics. This manifestly makes difficulties for the honest conscientious industrial physician who puts ethical practice and the human interests of employes above the desire to establish a record for any reason whatsoever.

The medical history of every employe who comes before the industrial surgeon is a matter of primary importance in the practice of industrial medicine. Manifestly the history records must be full, accurate and accessible. They must be permanent. They may be of the greatest value in connection with litigation involving matters relating to the health hazards of employment. They are of no less value in respect to medical service than the employe or his family may require subsequent to the successful practice of industrial medicine. All accidents and every form of illness that may involve loss of time, compensation or insurance

claims should be reported promptly, fully and accurately to the management. These are matters about which no favoritism whatever can be indulged in without lowering the dignity, usefulness and the reputation of industrial medicine and the medical profession in general. The system of record keeping should include monthly and annual reports which present an accurate picture of prevailing health conditions among employes, the work of the medical department and the results obtained. In no other way can medical service bring to the attention of industry its value and usefulness. The medical department of one Illinois company, for example, which was organized in 1925 shows a high dividend rate of return in dollars and cents without regard to the multitude of intangible benefits that have been accrued from the health service. Compensation losses paid by this company amounted to \$6,500 for the lowest and \$13,000 for the highest year of the four preceding the inauguration of the medical program. The insurance premiums paid by the company amounted to \$36,000 in the last year. Since the introduction of the medical service in 1925, the losses paid as compensation declined steadily during the first three years. This experience, which is by no means extraordinary, shows in a striking way and in a language understood by hard headed business men the economic value of industrial medicine and it illustrates very well the value of careful and accurate record keeping, pre-employment examination, re-examination, etc.

McCord emphasizes particularly the point that industrial medicine is a specialty. He feels strongly that the medical service provided by an industry for a group of employes cannot satisfactorily be left to the employes' choice in the community. The emergency character of many industrial medical problems, the difficulties of making contact with a particular private practitioner at a particular moment, the inaccessibility of original records due to the distribution of medical clientele, the lack of uniformity in records and the tendency of some physicians to champion the cause of the employe to an unjust degree are features which work to the disadvantage of leaving industrial medicine to independent practitioners of the community.

Continuing to quote McCord who favors industry selecting its own physician:

Accidents in industry occur at any hour of the work day, and for the greater portion of the day the practitioner is away from his office on calls at homes or at hospitals.

The time lost in going to and from the offices of various physicians, and the time consumed in waiting turns for treatment, involves an intolerable money loss due to idle machinery and lost time. Quoting further from McCord as to the disadvantages of permitting the choice of physician by the worker, who makes a selection without reference as to whether the family physician is especially fitted to treat the special type of injury sustained.

The periods of total disability allowed by many physicians are often unwarranted, as judged by other physicians. These are expensive and create discord if protested.

Dressings applied by many physicians for patients returned to duty frequently are dangerous and lead to further accidents.

Infection rates are high in proportion to the amount of uncontrolled medical care.

Unwarranted diagnoses, involving the plant operations as a cause, are often made in connection with injuries or disease states arising apart from work. One manufacturer cites a compensation claim for urticaria, which was diagnosed as "brass poisoning" when the worker was engaged in the occupation of tailoring.

Records required by law are assembled with the greatest difficulty when the entire group of physicians of the district participate in their compilation.

The general practitioner often feels it to be his sole duty to advocate the cause of the patient in disputed matters, instead of acting as the neutral umpire, serving the two interests equally and without prejudice.

The general practitioner often refuses information necessary in rearranging the disabled employe's work. Haughtily, the physician in charge may state that the patient's condition is a matter between himself and his patient.

The majority of industrial injuries in any plant are trivial, not justifying a search for the family physician, but calling for minor emergency care as a preventive against infection.

Physical examinations may be required by law and are desirable in any event. These are best made by a physician not of the applicant's choosing. Physical examinations are of most worth when procedures are standardized.

Many medical problems in every plant do not concern themselves with persons but with conditions, such as occupational disease hazards, ventilation, seating and noises.

Some states require by law the maintenance of a dispensary and the rendering of medical services on the plant's premises."

In the light of these considerations and in view of a substantial experience it seems clear

to McCord that industry has created a situation that necessitates a modification in the practice of medicine in order to meet the social requirements of modern civilization. To a great extent industry has recognized and taken advantage of medical skill and talent in meeting the health problems of the new order. To a limited extent the medical profession has recognized the necessity of adjusting itself to the new conditions. The opportunities of industry in utilizing medical service to the advantage and profit of itself and to the nation and the opportunities of the medical profession to adjust itself so that it may provide a service to industry commensurate with the capacity of the profession and the needs of industry are unlimited.

DISCUSSION

Dr. Deginhardt, Chicago: Dr. Deal is to be commended for having presented such an excellent paper. He has shown knowledge of his subject; experience in his line of endeavor and painstaking preparation of his address. I quite agree with all he has said. He has covered the subject so thoroughly that it leaves little to be added.

Our modern methods of machine production have necessitated an intensive inquiry into the cause of accidents, their prevention and the conservation of the health of all employees. Conclusions reached from this survey have pointed to the advantage of a physical and mental examination being given every applicant for a job to ascertain his fitness. As Dr. Deal has emphasized, periodic examinations should be made to obtain greatest results. I would go a step in advance, and insist that every employee who has been absent from his work on account of illness, or having undergone surgery, and even those who are returning from a vacation, is not to be permitted to return to work unless an examination warrants.

It has been my experience as supervisor of the medical department of several large manufacturing concerns during the last five years, that when these simple rules are enforced, it has been to the great advantage of both employer and employee.

There is a factor in this problem that Dr. Deal touched upon but lightly, and that is industrial psychology. We find that accidents in many instances are traceable to mental factors. Professor Burt aptly outlines it about as follows: There are possibilities in devising technique to predict individual susceptibility—tests of motor processes, emotions, and intelligence. Vocational maladjustment and fatigue play their role. Emotional difficulty arising outside the plant cause dangerous hangovers. Lack of information is sometimes responsible. Finally, publicity devices that influence the workers to be careful are worthy of consideration.

Dr. Deal has brought out that it is believed that some of the large industries through their medical de-

partment have gone in for record making mania, and have indulged in sharp practices to a degree that falsify their accident and loss of time statistics. I personally know of organizations where through their safety department they had conducted accident prevention campaigns so enthusiastically through their plant, that they had instilled in the minds of the employees that if they were involved in an accident, they would be dismissed. I have seen where injured employees purposely did not report their accident. Treatment of their injury was entirely neglected, or they called upon their family physician, he being requested not to make a report, the injured meeting the expense himself. Such procedures cannot be too strongly condemned. Under such a state of mind, together with the fear of sickness and old age, the efficiency of the employee is bound to be lowered.

A glowing example along this line is one related to me recently by the Chief Claim Agent of one of the largest Railroad Systems in the United States, on their Pacific Coast division. It is about as follows: "They had received numerous claims for injuries to members of a certain section gang. The foreman of this section gang was instructed that if accidents continued on his section, the foreman would be discharged. It so happened that not long thereafter one of the Mexican laborers of this gang was accidentally killed by an engine. Frightened and fearful that the threat would be carried out, he and his gang buried the laborer beside the right of way, and kept his name on the payroll. Some months later the auditing department were puzzled to learn what had become of certain checks mailed periodically to this foreman, and an investigation ensued and the facts were brought out."

When such tactics on the part of injured employees occur, it falsifies all statistical records and works a hardship on all concerned.

Industrial psychology has a definite contribution to make to human welfare and if conscientiously applied in relation to employer and worker will reward our industrial medical organizations with surprising results.

Dr. C. O. Sappington, Chicago: I was very much interested in the remarks made about accident prevention campaigns. I would like to call your attention to a report that is going to be issued, as I understand, by the American Medical Association. I had the privilege of seeing the report before its publication. It is going to be issued very soon and I believe the subject of it, unless they change it, will be "Medical Aspect of Workmen's Compensation." You will find in that report a discussion of this particular subject concerning accident prevention campaigns and a lot of very valuable material which you will be interested in. I merely mention it at this time.

Dr. M. Earl Brennan, East St. Louis, Ill.: Dr. Deal presented an ideal situation, particularly from the standpoint of the large industry. I personally think that most large industries by force of necessity institute good medical departments, because they can see in black and red figures the value of them. It is the small industries, with a few employees, under two hundred or so that really need to be educated. The discussant has

brought out health or safety campaigns very well. I would like to say that personally I think it is a lot of "hooy", in many instances, especially holding foremen and other officials responsible for lost time accidents. I oppose the character of the campaign simply to acquire a record or a trophy. There is no question about the records made by safety first education in reducing accidents.

The superintendent mentioned who buried the Mexican laborer because he was afraid to report the accident is a good example, in a major degree of what is going on, all over the country in a minor degree, particularly in some railroad systems. The stress and stigma placed on a three day loss accident, (I think it is three days) is silly, not because the man is injured or steps taken to correct the cause of the accident, all interest seems to be in the three days lost; not the accident. The employees have to make out a long report and are often reprimanded. They are consequently afraid to make out reports. They prefer not to report accidents with those who are really hurt; often the boss or superintendent are after the physician to get the injured back on the job, if only to have him sit around warming his heels at the stove, simply to save "lost time". Usually the industry pays a big price for the "no lost time" record they acquire.

Dr. Deal, in closing: I am glad the discussants emphasized some points which I did not bring out fully, and I agree with everything they have said.

MASSIVE PULMONARY ATELECTASIS IN RELATION TO ARTIFICIAL PNEUMOTHORAX WITH CASE REPORT. RAYMOND F. ELMER, M.D. AND CHARLES E. BOYLAN, M.D.

CHICAGO

Massive collapse of the lung is a condition in which one or more lobes, or an entire lung, suddenly becomes deprived of its air content without apparent cause and deflates. It is a much more common post-operative complication than has hitherto been believed, and may escape detection because of its clinical similarity to other chest conditions. Clinically, massive atelectasis resembles pneumonia, tuberculous pneumonia, pleurisy with effusion, and fibroid lung but differs markedly from these conditions from a standpoint of prognosis. It is therefore quite necessary for the surgeon to familiarize himself with this clinical entity. We wish herein to indicate the more salient features of the condition and to cite a case in point.

Historical:—The first description of massive pulmonary atelectasis was given by Legendre and Bailly in 1844. They regarded it as a fre-

quent complication of bronchitis in children and felt it was due to imperfect respiratory movements or obstruction from bronchial secretion rather than of inflammatory origin.

In this same year Mendelssohn experimentally produced atelectasis by mechanically obstructing the bronchi in animals.

Gairdner, writing in 1851, regarded obstruction of the bronchus with mucus as the most frequent cause.

In 1890, Pasteur described this condition following 34 cases of post-diphtheritic paralysis of the diaphragm and considered this latter to be the chief factor in producing massive atelectasis.

The tendency of experimentation during recent years has been towards disproving Pasteur's conclusions and supporting the theory that bronchial occlusion is the primary cause and other factors secondary.

Etiology:—Scott has suggested three possibilities:

- (a) Vasomotor
- (b) Bronchial Spasm
- (c) Swelling of the Mucous Membrane

Vasomotor:—This influence may be exerted in a number of ways: It is possible that dilatation and stasis might block the bronchioles by an outpouring of secretion. According to some authors, alteration in the degree of inflation may be brought about by changes in pulmonary circulation; a diminution in the tension of the pulmonary arterial stream resulting in a collapse of the lung.

Bronchial Spasm:—Reflex spasm involving the walls of the bronchioles is one way in which the lung can be rapidly emptied of air.

Jacobaeus, reporting four cases of massive collapse following lipiodol injection, advanced an explanation: He concluded that spasm of the bronchi and bronchioles expressed most of the air in the bronchial system, leaving only the alveolar air to be absorbed. In support of this view he claimed, that in two of his cases, the bronchi were seen to be distinctly smaller in the state of collapse than later when the lung had re-expanded.

This however scarcely seems to be a fair contention since one would naturally expect the bronchi of a collapsed lung to be smaller.

Swelling of the Bronchial Mucous Mem-

brane:—A third possibility, is an edema of the bronchial mucous membrane, similar to an angioneurotic edema. This view has some support in recent work done by Hoover with regard to the mechanism of asphyxia in the guinea pig. He has shown that the bronchial obstruction is due to swelling of the bronchial mucosa, and is not due to spasm.

Meakins has suggested that the collapse may start as a peri-bronchial pneumonia and that exudation may block the bronchus and by absorption of air distal to the obstruction produce a collapse.

These various explanations are for the most part theoretical but may be of some assistance

collapse and several refills being uneventful . . . On February 10 the patient was given 350CC of air. He coughed considerably following the treatment, rested half an hour and went home.

Upon reaching home, he became very dyspneic, coughed up considerable blood-tinged sputum and when seen, was cyanotic, with temperature of 104°, pulse 120, respiration 30. The patient was hospitalized. Examination of the chest revealed:—Immobility of the right lung. Displacement of the apex beat to the right side. Dullness on percussion over entire right side. The breath sounds were distant and blowing. A roentgenogram: Fig. 1, revealed the following findings: Partial *left* pneumothorax. Heart and mediastinum displaced to the right. The right chest was obscured by a dense shadow except for several small areas in the upper right field. This consolidation of the right side strongly suggested massive collapse.



Fig. 1. Arrows indicate left partial pneumothorax. Heart and mediastinum are displaced to the right. The right chest is obscured by a dense shadow. This consolidation is indicative of massive collapse.

in accounting for massive collapse when this phenomenon is present or encountered.

The following case is illustrative of massive collapse. The type of operation however, which precipitated the condition and the probable sequence of events leading up to it are different from other cases reported in the literature.

Case: C. S., aged 46 years, had been treated by us for pulmonary tuberculosis. He had an involvement of the *left lung* with very little pathology on the right side. An artificial pneumothorax was done on the left side. Air therapy had been instituted six weeks ago, the initial



Fig. 2. Roentgenogram taken one month from onset indicates the involved lung has regained its air content with the exception of a small area near the hilus.

Within 24 hours of admission the patient's subjective signs disappeared; he became quite comfortable, and had no respiratory difficulty although the physical findings remained as before. These gradually cleared up in the course of a week.

A film of the chest taken three weeks from the onset showed reexpansion of a small area in the middle lobe of the right lung. A film taken one month from onset: Fig. 2, revealed that the lung had regained its air content with the exception of a small area near the hilus.

In view of the fact that the opposite and healthy lung had collapsed following artificial pneumothorax, the mechanism by which this had occurred was a matter of considerable conjecture.

A possible *modus operandi* suggested itself and may have been accomplished as follows:—

An artificial pneumothorax was performed on the left side. This air compression caused an alteration in the pulmonary circulation on that side. There was a resultant dilatation and stasis, with an outpouring of secretion and collapse of the alveoli on the same side.

The repeated coughing spasms following the pneumothorax had a tendency to remove the secretions upward along the bronchial tree. Probably in this particular instance the secretion accumulated in amount as it ascended, and, on reaching the bifurcation of the trachea could no longer pass upward, but was deflected into the right bronchus causing a massive atelectasis of the right lung.

We realize this explanation seems highly theoretical but nevertheless it has certain points which recommend it to this case.

Symptoms: There is a sudden onset with elevated temperature, rapid embarrassed respiration, cyanosis, and pain in the affected side. An irritating cough is usually present. There is frequently no history of pre-existing pulmonary trouble although often pulmonary tuberculosis is present.

The physical findings consist of immobility of the chest, dullness on percussion over a variable area and distant blowing breath sounds. The diagnostic clinical sign is the dislocation of the heart and mediastinum towards the affected side. The roentgen ray is of great assistance in confirming the diagnosis.

Atypical cases will present a less severe picture, the distress is not so marked, the fever is less high, and there may be very little cough or cyanosis. The x-ray establishes the diagnosis in this type of case. One must differentiate this condition from pneumonia, pleurisy with effusion, tuberculosis pneumonia and other chest conditions producing a similar clinical picture.

Pathology:—The affected lung is shrunken, heavy, of bluish color, airless, and may show congestion. A plug of mucus or a blood clot may be found obstructing a bronchus but often there is no evidence of the existence of any gross obstruction. Hence the theory of obstruction does not hold good post mortem in explaining all cases of massive atelectasis.

Prognosis:—As a rule the prognosis seems to be good; by far the greater percentage of patients recover rapidly and leave the hospital apparently cured.

Treatment:—The treatment is largely expectant in the above case; morphine and atropin, the latter in 1/50 gr. doses were given but it is questionable whether or not they played a role in the patient's recovery.

Conclusion:—1. Massive pulmonary atelectasis occurs more frequently than is generally believed and should be considered among post-operative complications. It may follow such minor procedures as thoracentesis and artificial pneumothorax.

2. The etiology is theoretical; the weight of evidence seems to point to bronchial obstruction.

3. Despite the alarming clinical picture, the

prognosis is good, with complete recovery in about 80% of cases.

4. The treatment is palliative, drugs calculated to relieve bronchial spasm should be used empirically.

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INDICATIONS FOR LUNG COLLAPSE IN TUBERCULOSIS BASED ON A PATHOLOGICAL CLINICAL CLASSIFICATION*

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Rest is considered the single most important agent in the treatment of pulmonary tuberculosis. The lungs are vital organs, inasmuch as respiration is a vital function. Bed rest, even though it be general and constant, can only be relative and never complete as applied to the lungs. To accomplish absolute or complete rest of a lung or portion of a lung some form of surgical collapse therapy must be utilized.

Ten years ago it was felt by a majority of those interested in phthisiotherapy that only approximately fifteen per cent of the tuberculous population had tuberculous disease which could be benefited through such collapse. In the past two years reports emanating from different institutions throughout this country indicate that the value of collapse therapy is being more realized and its use more widespread. Different institutions now report from twenty-five to eighty-five per cent of all patients admitted as having some form of this therapy applied.

There are three basic indications for lung collapse:

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1. To prevent extension or metastatic tuberculous disease and to promote healing in the diseased area.

2. The public health aspect. To prevent dissemination of infection through compression of the disease process, limiting the extension of infected sputum.

3. The economic reason. When the patient is the wage earner of the family and the disease process can immediately be controlled by collapse therapy, it enables the return of the worker more quickly to his occupation and income. It also lessens the cost to the patient's family or to the community when institutional care must be provided.

While these conditions are basic, they are dependent upon the type and extent of the pulmonary lesion, as well as various complications which may be present.

Heretofore, pulmonary tuberculous disease occurring in the adult has been classified as adult tuberculosis and in a majority of instances it was felt that such disease was the result of a lighting-up of a tuberculous process that had originally occurred in childhood and had remained residual from what was termed "childhood tuberculosis." The intensive campaigns waged against tuberculosis have decreased the widespread extent of tuberculous infection so that today it is not ubiquitous as to its dissemination. The type of disease resulting from a primary infection, commonly termed the "primary complex" or "childhood tuberculosis," in a majority of instances tends to heal spontaneously and is now being seen later in life, both in the adolescent and adult groups, because of delayed primary infection.

It becomes necessary, therefore, to distinguish between this and other clinical types of tuberculosis at a later age. The most important consideration, therefore, in the handling of pulmonary tuberculosis should center around a classification of this condition, which would give the practitioner a more definite understanding of the underlying pathological and clinical basis and thus be the criterion for the prognosis and treatment.

The present classification, as standardized by the National Tuberculosis Association, is largely based on extent of lesions and symptoms, but does not segregate pathological types so as to differentiate a tuberculosis which may

heal within a few months from one which may persist to the termination of the patient's life or cause that termination. It also does not differentiate the serious differences that exist between a malignant type of early tuberculosis and a benign type of tuberculosis which latter may be far advanced at its inception, according to the extent of lesion, and yet clear spontaneously within several months.

Ornstein, Ulmar and Dittler have given us a classification which, with some slight additions, I feel is most useful in elucidating the above conditions. This classification is primarily pathological, based on the reaction of the human host to the tubercle bacillus, and indicates four main types which may and do frequently overlap in their occurrence. The extent of lesion is continued, as previously, as is the symptom classification, A, B, and C. The outline of different types may be given as follows:

A. EXUDATIVE—

1. Acute benign
2. Exudative Productive
3. Caseous pneumonic (malignant)
 - a. Acute pneumonic phthisis
 - b. Acute bronchopneumonic tuberculosis
 - c. Fibro-ulcerative tuberculosis (subacute and chronic)
 - d. Chronic fibroid

B. PRODUCTIVE—

1. Chronic proliferative

A-1. The Acute Benign Type. In this condition hypersensitivity to the tubercle bacillus and its products exists with an allergic response. The reaction is almost entirely serous and no ensuing necrosis or caseation can be demonstrated clinically. Resorption of the exudate takes place with a fair degree of rapidity within several weeks to several months, leaving normal lung tissue. Hemoptysis may be present at the onset. There is, however, only slight cough and expectoration and only a slight or moderate febrile change. The processes in the various types resemble very much a primary complex or an epituberculous infiltration and may be the result of a delayed primary infection in an individual who has not been previously exposed to tuberculosis. These patients very frequently are only discovered accidentally in the taking of a roentgen film or when a careful physical examination is made in an individual who has been exposed to infection and reports routinely.

A-2. *The Exudative Productive Tuberculosis.* This type and the caseous pneumonic type, the description of which follows, may resemble one another at the onset, but careful observation of the course reveals that resorption of the exudate supervenes and that necrosis and cavity formation do not occur. There is, however, an increase in scar tissue, particularly along the peri-bronchial tracts. This scar tissue tends to persist after the acute manifestations have subsided. The course in this type is usually over a period of months, with a definite tendency to resorption and healing.

A-3. *Caseous Pneumonic Tuberculosis.* A massive dose of tubercle bacilli, with a tremendous stimulation of body cells, results in a severe destruction which involves a portion of the lobe, a complete lobe or the complete lung in this condition. Necrosis supervenes and sloughing of caseous tissue is only controlled by marked scar tissue formation surrounding the area. This is the malignant type of tuberculosis and constitutes over fifty per cent of all cases. The caseous material contains large numbers of tubercle bacilli, so that extension of the disease occurs not only as an endogenous re-infection to adjacent tissue, but metastatically to other portions of the lung or to other organs within the body. The large number of tubercle bacilli extruded also provide danger to contact susceptible individuals.

3-a. *Acute Pneumonic Phthisis.* In the caseous pneumonic grouping we have acute forms, such as acute pneumonic phthisis, where the disease is limited to a lobe and where the onset may resemble that of a lobar pneumonia and is not followed by resolution in the usual period of time, but by sloughing out of the caseous material which develops, and cavitation.

3-b. *Acute Bronchopneumonic Tuberculosis.* This occurs when multiple foci of tuberculous involvement occurs throughout a portion of a lung, or both lungs.

3-c. *Fibro-Ulcerative Type.* The fibro-ulcerative type is a continuation of one of the above named types in the caseous pneumonic group, in which proliferation of fixed tissue cells occurs so that productive changes are evident along with the ulcerative phenomena.

3-d. *Chronic Fibroid Tuberculosis.* This is the end stage toward healing of the caseous pneumonic group, to which stage ulceration is

only a minor factor, but is yet capable, because of some breaking down of tissue, of producing the dangerous factors involved in endogenous re-infection or external contact infection.

B-1. *Chronic Proliferative Tuberculosis.* This type of tuberculous disease is a pure productive type found where the reaction to the superinfection dose of tubercle bacilli is very slight and a low grade of fibrosis results, which continues more or less indefinitely, producing a cirrhotic appearance. The process continues more or less by continuity and the patients usually die of concurrent infection or intercurrent disease. In this condition, tubercle bacilli are found only at infrequent intervals in the sputum and, therefore, these individuals do not present the menacing condition which occurs in the chronic fibroid tuberculosis of the caseous pneumonic type, from which it should be carefully differentiated.

The value of understanding these various types of tuberculosis is based on the fact that the acute benign and exudative productive types of this disease heal almost spontaneously, the physician, of course, maintaining the usual therapeutic regime of rest, fresh air and diet. Many patients with tuberculous disease, who fall into these two groups and have been subjected to different forms of therapy, have piled up glowing statistics for such treatment. The favorable, ultimate outcome in these cases could not have been affected. Especially is this true of patients with such forms of exudative tuberculous disease where annular shadows have been seen, which shadows were not produced by cavitation, but rather by zones of cellular infiltration in the periphery of the exudate or by temporary emphysematous blebs.

The caseous pneumonic type, which is the malignant type of tuberculosis, should, of course, be given the benefit of immediate attention as soon as it is discovered and, because of the danger from endogenous re-infection, collapse therapy, wherever possible, should be utilized to control these lesions. In this type also, because of the large quantities of tubercle bacilli thrown off, most careful precautions should be taken as to the spread of infection to other individuals.

The chronic proliferative tuberculosis persists and continues in its extension throughout the pulmonary regions. No therapy has been

devised which influences this type of tuberculosis. Progression, as stated, is slow and continuous, without any apparent abatement of the process.

COLLAPSE THERAPY

The importance of this classification in determining indications for collapse therapy becomes evident as one appreciates the different pathological types and their clinical course. In all forms of pulmonary tuberculosis evidencing active pathology, patients should receive a prolonged period of rest. This rest must be mental as well as physical.

Collapse therapy should be utilized in all patients having a caseous pneumonic tuberculosis as soon as the disease is discovered, where the pathology is unilateral, or where bilateral disease allows a unilateral collapse, or a combination of different types of such therapy.

Inasmuch as there are instances where factors of resistance vary at different time intervals, so that diverse types of pathology in either lung are evident, it becomes necessary for the phthisiotherapist to have a complete understanding of these types. The phthisiotherapist of skill and experience can visualize, after a brief period of observation, with a considerable degree of accuracy, the type and course of the disease. It is necessary, furthermore, that the surgeon have the requisite skill and experience for this type of work.

The different types of pulmonary collapse that have proven of definite value, and are therefore utilized today, may be enumerated as follows:

1. Artificial pneumothorax.
2. Intrapleural pneumolysis.
3. Oleothorax.
4. Extrapleural pneumolysis.
5. Phrenic neurectomy.
6. Extrapleural thoracoplasty.

Artificial pneumothorax is the simplest, the most complete, and therefore the primary method of choice in pulmonary collapse. When properly and carefully employed, it should not create any damage. It can be deflated very easily and even in those cases where collapse has been maintained over a period of years in only a few instances has carnification of the lung occurred.

Bilateral pneumothorax may be performed where indications for such therapy exists.

Where adhesions of the narrow band type are present in single or multiple numbers, in many instances by gradually increasing inflation and completing the pressure reading at a slightly positive point, stretching of such adhesions may occur so that sufficient collapse of the lung may be had, to give one the proper therapeutic result. Where pleural effusion is present, this procedure may also be used to replace such fluid, which has been aspirated.

The prime indication for artificial pneumothorax is the caseous pneumonic tuberculosis, in which there is cavity formation. In acute pneumonic phthisis and bronchopneumonic tuberculosis some authors have advised against pneumothorax collapse. Using gradual collapse in these types satisfactory results have been obtained in my experience. In the acute benign or exudative productive types this form of therapy is only used where a severe pulmonary hemorrhage occurs, which hemorrhage does not seem to be controlled by other ordinary methods.

Occasionally in exudative productive tuberculosis, even though one realizes the favorable outcome, for economic reasons to hasten the control of the tuberculous process, artificial pneumothorax may be employed to allow the patient to become ambulatory sooner.

Where adhesions are present, of the type that do not appear as though they would yield sufficiently, supplemental methods to artificial pneumothorax should be employed.

Intrapleural pneumolysis. This procedure should be the first attempted in sequence after artificial pneumothorax when adhesions are present that experience dictates can be treated by this method. They must be able to come within range of the thoracoscope and cautery. The Unverricht modification of the Jacobsen method is more popular at this time. The Matson's, practicing this method in this country, report a mortality of less than one-half per cent. We hesitate to recommend the severing of adhesions by pulling or cutting with the knife.

Oleothorax. The use of this procedure may next be considered. It may be used:

1. As a compression oleothorax to re-establish collapse in patients where air inflations have failed to maintain a proper collapse of the diseased lung.

2. As an inhibition oleothorax to prevent expansion of the lung in cases where a satisfactory collapse cannot be maintained by air inflations because of a threatened early obliterative pneumothorax.

3. In the complication of pneumothorax empyema, in which it may be utilized as a disinfectant treatment.

Extra-pleural Pneumolysis, usually applied as apicolysis, is important:

1. Where adhesions prevent the use of intra-pleural pneumolysis.

2. Where rigid walls in cavities prevent the collapse of such cavities.

3. Where an area of localized caseous pneumonic disease limited to the apex is found in the contra-lateral better lung, or where bilateral apical caseous pneumonic disease is found.

4. It also may be used in conjunction with a partial or complete thoracoplasty.

Various types of "fills" are used. Those recommended by different surgeons are: Sauerbruch (the gauze pack); Lilienthal (a rubber elastic gauze-covered pack); Tuffier (fat); Baer (paraffin); Archibald (muscle tissue).

Precautions as to perforation through the cavity wall or shifting of the pack, especially when paraffin is used, should be taken.

Phrenic Neurectomy. We recommend this as an adjunct to artificial pneumothorax, where basal adhesions are present, and through the relaxation of such adhesions more lateral compression of the lung can be obtained with the gas. We also use it in instances where slight collapse is necessary in the other lung where one lung has had artificial pneumothorax. We are, however, beginning to realize that this procedure does not offer sufficient compressive force against thick walled cavities to produce their collapse. The partial compression may aid in some slight promotion of rest, which can further fibrous tissue formation and contraction. A large number of the case reports concerning this procedure, evidencing extensive disease, we feel should be grouped in the benign or exudative productive types, which without such procedure would also have had a good prognosis.

Thoracoplasty has its indication where artificial pneumothorax and its supplemental procedures cannot be applied and the surgery to compress pulmonary cavitation is necessary. It

should be used in the caseous pneumonic group which have passed the acute stage and show evidence of some productive tissue changes. One should determine this almost immediately after the failure of the other procedures and its application should not be unnecessarily delayed. While I have seen this procedure practiced by a number of surgeons, the multiple stage operation of Hedblom has in my experience yielded the best results. Thoracoplasty is not a heroic test to be feared, but a procedure with definite indications.

CONCLUSIONS

1. The pathological clinical classification given above separates pulmonary tuberculosis into benign and malignant types. The latter should be given the advantage of collapse therapy immediately.

2. The various procedures employed in pulmonary collapse have a definite sequence of application. The presence of certain pathological concomitants determines their individual application.

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DISCUSSION

Dr. Carl A. Hedblom, Chicago: The proper selection of patients for compression therapy in the treatment of pulmonary tuberculosis, as Dr. Goldberg has emphasized, is the most vital consideration. It follows that a classification that will serve us best in making our selection is of great importance. However, we must not expect too much from a pathological classification. Varying virulence of the infective organism and fluctuating resistance on the part of the patient, produced by intercurrent conditions may modify the whole clinical picture.

As to methods of compression it is important to keep in mind that pneumothorax collapse is the simplest and, barring adhesions, the most complete and can be terminated. Phrenic neurectomy has a distinct field of usefulness, both as an independent and as an auxiliary operation. It is for thoracoplasty that the selection of the patient is of paramount importance.

It has seemed helpful to me to consider the patient always in the light of the course of the disease from the onset as determined by a carefully taken history. A patient with open lesion, who presents himself without much loss of weight and strength years after the

onset, and whose lesion is essentially unilateral, is almost always a favorable case. The chief question in such a case is as to the amount of secondary visceral damage.

Borderline cases include those who have had considerable involvement on the other side, but which is quiescent, those who present some evidence suggestive of activity in the "better" lung, and those who have symptoms and signs characteristic of a mixed fibrosis and caseating lesion. The several stage operation makes it possible to extend the benefits of thoracoplasty to many such cases otherwise not suitable for it.

Team work on the part of the thoracic surgeon and the internist or phthisiologist is essential to the best results. General classifications will help but the clinical course in care of the individual patient, in my opinion, is a criterion we shall not be able to do without.

SOME OBSERVATIONS ON THE SUBJECT OF DIABETES MELLITUS

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The etiology of diabetes mellitus is still shrouded by glittering generalities; age, sex, heredity, obesity, etc., being discussed and the conclusion must be drawn that the cause remains unknown. On the subject of the infections, Fitz, in *Oxford Medicine*, states as follows: "The part that infection may play in precipitating an attack of diabetes is interesting to speculate upon. It is well known that infections of any sort will lower a diabetic tolerance. It is equally well known that a very fulminating form of diabetes may follow various acute infectious diseases almost immediately. Whether any specific organism causes diabetes is doubtful."

It seems that a careful consideration of the following two cases may permit us to take a more definite stand and charge the cause of diabetes against acute and chronic infections. My cases both happen to be acute.

It is not often that the medical history of the diabetic patient is known to the attending physician from birth, and the family history personally known to him as well. These facts were known in both of these cases.

Case 1. R. P., male, aged 8 years. Usual childhood diseases. A normal healthy child. August 4, 1930, had an acute attack of appendicitis which perforated before the consent of the family was obtained for operation. Operated on, August 4, 1930, made an uneventful recovery and was discharged with slight drainage in three weeks. Urine analyses in hospital were negative. On September 12, 1930, the parents came in without a urine

specimen and mentioned a urinary disturbance. September 27, 1930, a specimen of urine was furnished which was negative except for 2.8% urine sugar. Patient has been on insulin much of the time since then, and still has urine sugar.

Case 2. Male, aged 53 years. Usual diseases of childhood and frequent attacks of suppurative tonsillitis. Clean appendectomy, 1902. March, 1926, suffered an attack of suppurative tonsillitis followed by an acute inflammatory rheumatism (severe), duration four months. Hospitalized, one month. Urine findings negative. August, 1926, made application for life insurance and 0.3% urine sugar was discovered. This finding has been more or less constant ever since; sometimes negative on rigid diet and with the least error in diet, sugar again appears.

There is no hereditary history in either case. The 53 year old case might be classified as obese, but has been the same for years. In these two cases at least, it seems that we may rather definitely connect up the cause with the acute infection which was severe in both cases.

INTRACRANIAL LESIONS OF OTITIC ORIGIN FROM THE VIEWPOINT OF THE OPHTHALMOLOGIST*

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The eye and the ear are so closely related in the fields of neurology, ophthalmology and otology, that it is of the utmost importance that the specialist in these respective fields should realize the significance of this relationship in the diagnosis of intracranial lesions. Frequent eye examinations should be made in all cases of intracranial ear complications in an attempt to ascertain involvement of the second, third, fourth, fifth, sixth and seventh nerves, the intracranial sympathetic nervous system and the venous sinuses.

The anatomy and physiology underlying the ocular symptoms and signs of otitic origin will be first considered. There are four definite routes by which the eye may become involved in intracranial complications of otitic origin. The first is by direct extension of inflammation along the nerves and subarachnoid space. The second is by the blood stream by way of the venous sinuses to the cavernous sinus and ophthalmic vein. The arteries may be involved by toxins and bacteria. The third is by inflammatory swelling directly upon blood vessels and

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nerves. The fourth is reflexly through the motor, sensory and sympathetic nerves.

The anatomy and physiology of the cranial nerves affected in eye complications of otitic origin are graphically shown in the accompanying diagrams.

The symptoms of otitic origin are caused mainly by involvement of the second, third, fourth, fifth, sixth and seventh nerves, the intracranial sympathetic nervous system and the venous sinuses.

Headache is the most frequent symptom present and is usually caused by an involvement of the trigeminal nerve. The type or localization of the headache does not have much localizing value from the diagnostic point of view. Localized headache may be a prominent feature of extradural abscess.

Diplopia is quite a prominent symptom, and is usually due to an involvement of the sixth nerve. The branches to the upper lid and pupillary fibers are most often involved when the third nerve is affected. The fibers of this nerve innervating the other extra-ocular muscles are only seldom involved. Fourth nerve involvement is rare, and when present, may indicate suppuration in the posterior fossa.

Visual vertigo may be differentiated from that caused by vestibular lesions because it disappears when the eyes are closed.

Exophthalmos is rare, most usually being due to a nasal complication. It is most often due to a cavernous sinus thrombosis, which is characterized by chemosis, edema and cyanosis of the eyelids and an orbital proptosis.

Spontaneous oral nystagmus must be distinguished from visual nystagmus. When it occurs in cerebellar abscess, it is at first to the side of the lesion, but upon destruction of the vestibular apparatus, changes to the healthy side.

Decrease in vision may be accounted for by inflammatory involvement of the optic nerve, choroid, retina and cornea; or by direct or indirect pressure upon the optic nerve either by the increased intracranial pressure or by pressure from the intracranial lesions. The accommodation may be affected by third nerve involvement.

Visual aphasia may be caused by an abscess in the temporosphenoidal lobe which may damage the posterior part of the second and third

temporal convolutions. If this occurs in a right handed person, the location of the abscess will be on the left side, and vice versa, if in a left handed person. There may also be a nerve deafness of the ear on the unaffected side.

Visual field defects, if present, may be of prime localizing importance. Homonymous hemianopsia with crossed motor, sensory, and auditory losses may be caused by a lesion of the internal capsule due to a temporosphenoidal abscess. Inflammation of the optic nerve may result in an optic neuritis, which is characterized by peripheral contraction of the visual fields, color and transitory relative scotomata. Blind spot enlargement may be an early finding.

The various intracranial complications of ear diseases which may affect the eye next merit consideration.

Brain abscess is of the utmost importance on account of the few and indefinite symptoms usually associated with it. It is of serious consequence and recovery is rare. It is usually due to direct extension from bone infection, or may be metastatic from a focus of infection elsewhere in the body. The eye symptoms most usually resulting are due to affections of the nerves innervating the extra-ocular muscles, or of the sympathetic fibers. There may be 1, ptosis, either due to sympathetic or third nerve involvement; 2, conjugate deviation; 3, keratitis from fifth nerve involvement; 4, third nerve paralysis with its resultant diplopia; 5, pupillary dilatation from sympathetic irritation. Fundus examination may reveal papilledema from increased intracranial pressure; or optic neuritis with edema of the nerve head from optic nerve inflammation.

Optic nerve involvement as evidenced by papilledema and optic neuritis may be the earliest finding. A unilateral optic neuritis may be indicative of an intracranial lesion on that side of the head. Subtentorial abscesses result in more marked disk choking than abscesses in the cerebrum. A frontal lobe abscess usually does not result in papilledema, as there may be no obstruction to the cerebrospinal fluid system.

Frontal lobe abscess does not, as a rule, result in visual field changes. Complete or incomplete homonymous hemianopsia accompanied by choked disk occurs quite often in temporal and

occipital lobe involvement. Transient hemianopsia may occasionally be found.

The types of brain abscesses that may be found include: 1. cerebellar abscess, the symptoms of which include (a) papilledema; (b) vertigo associated with nystagmus; (c) word aphasia. 2. Front lobe abscess in which ocular findings are rare. 3. Occipital lobe abscess which is rarely of otitic origin and may best be diagnosed by ventriculography. 4. Multiple abscesses.

Meningitis although rarely occurring in cases of suppurative otitis media results in an exceptionally high mortality. It consists of two types: 1. the septic type (suppurative meningitis), in which the spinal fluid contains micro-organisms and 2. the aseptic type (serous meningitis), with no micro-organisms in the spinal fluid. Papilledema may be an outstanding finding. The eye findings may consist of the presence of Gradenigo's syndrome, exophthalmos, fourth nerve paralysis, nystagmus and irregular visual field contractions.

Intracranial venous sinus involvement often results in eye disturbances on account of the frequency of lateral sinus thrombosis. Papilledema, optic neuritis and nystagmus are frequently found. There may be retinal hemorrhages, orbital inflammation and retinal vessel obstruction caused by septic thrombi. The oculomotor nerves may be involved.

MOTOR, SENSORY AND SYMPATHETIC NERVE INVOLVEMENT OF THE EYE

A. Optic Nerve. Papilledema or choked disk is primarily a non-inflammatory swelling of the optic nerve head. The swelling may reach 3-6 diopters of elevation. Papilledema may develop first on the side of the brain abscess. It must be differentiated from papillitis and pseudo-papillitis. The blind spot is usually not as greatly enlarged in papilledema as in papillitis, because it is due to a mechanical condition and not an inflammation which reduces the nerve function. In pseudo-neuritis the blind spot is small. The diastolic pressure of the vessels in the eye is greater than the diastolic pressure in the brachial artery. This can be measured by Baillart's new pressure gauge.

The presence of papilledema requires a differential diagnosis which includes:

(a) Brain tumors. These include pituitary

disorders in which optic nerve atrophy is more frequent, cerebellar tumors in which papilledema is an early symptom, and temporal lobe tumors where choked disk is also frequently found.

(b) Brain abscess in which papilledema is frequently seen, especially in temporosphenoidal abscesses. It is usually more marked on the side of the abscess.

(c) Tumor equivalents. This includes chronic cisternal arachnoiditis, oxycephaly and pachy-meningitis hemorrhagica interna.

(d) Sinusitis in which papilledema is rare, although enlarged blind spots are frequently found in optic nerve involvement from diseased ethmoids and sphenoids.

(e) Arteriosclerosis resulting in a neuroretinitis which may closely simulate a papilledema.

(f) Epidemic encephalitis in which papilledema is rare and ocular nerve paralysis is more common.

(g) Meningitis. In acute tuberculous meningitis and cerebrospinal meningitis papilledema is rare, optic neuritis being found more frequently.

(h) Nephritis—rarely present.

(i) Syphilis—present in about one out of seven cases.

(j) Cranial trauma where retinal hemorrhages may be frequently found while papilledema is rare.

B. Third Nerve. This is rarely involved in otitic intracranial complications because it is not in intimate contact with the cavernous sinus or the petrous tip. It innervates the levator of the upper eyelid, all the extra-ocular muscles except the superior oblique and external rectus. Its involvement may result in partial ophthalmoplegia externa with ptosis. There may also be an ophthalmoplegia interna with loss of accommodation and iris dilatation.

C. Fourth Nerve. It is rarely involved due to the protected course it follows.

D. Fifth Nerve. Middle fossa infection affects the Gasserian ganglion which lies anterior to the tentorium and in contact with the cavernous sinus, and results in pain being present. There may be laceration, photophobia and corneal tactile changes.

E. Sixth Nerve. This nerve is most commonly involved in disturbances of the eye ac-

accompanying ear diseases, due to its long exposed course over the petrous tip. It may be pressed upon by any condition causing downward pressure of the brain, resulting in palsy of the external rectus muscle. There frequently results Gradenigo's syndrome which is characterized by: 1. acute suppurative otitis media; 2. severe temporoparietal pains; 3. paresis or paralysis of the abducens of the same side. The prognosis is favorable. The paralysis occurs suddenly and is usually on the same side as the lesion.

F. Seventh Nerve. This is also a motor nerve and lies exposed similarly to the sixth. Any pressure resulting from inflammation or trauma of the bony tissue forming the canal of the seventh nerve, will cause paralysis of this nerve, resulting in lagophthalmos and lateral paralysis of the soft palate.

G. The sympathetic nervous system. In its relation to ocular disturbances of otitic origin, the eye and ear are closely related through the sympathetic nervous system.

H. Nystagmus. A lesion of the right cerebral hemisphere may be suspected if the quick component of nystagmus to the left is absent, or if there is conjugate deviation of the eyes to the right upon labyrinthine stimulation. Nystagmus is frequently present in cerebellar abscesses, and according to Neumann the quick component is directed towards the diseased side. It is usually horizontal or rotatory, occasionally a combination of both. Neumann differentiates a cerebellar from a labyrinthian nystagmus as follows: When the nystagmus is towards the diseased side, the diagnosis of a cerebellar abscess from this symptom alone cannot be made, if the labyrinth still responds to external irritation (caloric, galvanic or pressure). If there is a rotatory nystagmus towards the diseased side and the labyrinth does not respond to irritation or has been destroyed by previous operation, it is probably due to a cerebellar abscess. The exact determination cannot be made before a labyrinthian operation is performed.

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DISCUSSION

Dr. Samuel J. Meyer, Chicago (closing): The reason I took up this subject was because working in a large general hospital we are called upon frequently by the other departments to help in the diagnosis, particularly in children where it is sometimes hard to know the exact condition.

ALCOHOL AND ITS USES IN MEDICINE*

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To discuss or even abstract a subject of such a menacing giant as ethyl alcohol (C_2H_6O) in a period of fifteen minutes is, indeed, a hazardous undertaking. In times as these when alcohol as a beverage is being brought back to a thirsty public we must not cast aside its extreme value in therapeutics and with its whisky derivative, stands out prominently and demonstrates itself to be the most important preparation in the United States Pharmacopoeia.

Not only is it administered to the indigent sick, but it has been stated authoritatively and universally admitted that grain alcohol with its various preparations is unlimitedly useful, for without it the chemical laboratories throughout the world could not exist, nor scientists delve into researches of various kinds without alcohol. In limited quantities, therefore alcohol is undeniably beneficial to human economy, and alcohol with its various preparations is indispensable at this stage of human development and chemical evolution.

It is freely admitted that the therapeutic value of alcohol has been a matter of much dispute and the point of view has often been influenced by a prejudice and a lack of objectivity in the consideration of the question. It is true that alcohol may be described as a poison; poison, however, is a quantitative conception; a few milligrammes of an alkaloid will poison a person, but so also will about sixty grammes of common salt, which is perfectly harmless in small doses.

It is true that alcohol even in small doses may have an unfavorable effect on the central nervous system, such as the removal of inhibitions which it produces seems to result in a quickened capacity of reaction with the de-

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crease of self-criticism and power of judgment coupled with the retardation of the deep reflexes. The respiratory and vasomotor centres, on the other hand, are stimulated by small doses of alcohol. Increase of the blood-pressure with acceleration of the pulse-rate has been demonstrated with certainty. This is attributable to the fact that under the influence of small doses of alcohol the blood flows from the intestinal vessels to the skin, the musculature and the brain; persons in a state of collapse or in a faint can, therefore, easily be restored by small doses of concentrated alcohol, although, of course, analeptics, the effect of which is to stimulate the heart and respiration, are naturally superior to alcohol and should generally be used by preference. Alcohol has a paralyzing effect on the heat-regulating centres; the temperature falls, a process which is contributed to by the dilatation of the cutaneous vessels. In certain circumstances it is thus possible to bring down the temperature and at the same time benefit the patient by the well-known euphoric effect of alcohol. In feverish illnesses it is also a valuable means of nourishment, for it enters normally into our metabolism. Even in the morning when the body is in a condition of fasting, small quantities of alcohol are present in the blood and they are increased by food with a high carbohydrate content. For patients who run high temperatures, the fact that alcohol is easily combustible independently of the secretory and motor function of the stomach is a great advantage. Even in this case, however, it can only be turned to account to a limited degree; the human organism can burn up, at the most, 10 c.c. alcohol in an hour; a further increase of the dose does not produce any increase of the combustion. In suitable cases, therefore, it is as well to try to supply the patient with additional calories by giving small and frequent doses of alcohol. Since 1 gm. alcohol represents 7.2 calories (1 gm. fat—19.4 calories, 1 gm. protein or carbohydrate—about 4 calories), a person in bed may satisfy one quarter to one sixth of his daily requirement with 50 gm. alcohol which would be represented by about $\frac{1}{2}$ litre of wine. It is also important to remember that alcohol stimulates the appetite as well as the secretory activity of the stomach and intestines, owing to which any other food taken by the patient is better assimilated. We

also utilize this property of easy combustibility combined with a high caloric value in treating diabetics, particularly as alcohol has an anti-ketogenous effect. In the past, alcohol was indispensable in grave cases of diabetes. Since the introduction of insulin, it is true, it is no longer of such great importance, but even today, physicians experienced in the treatment of diabetes permit alcohol in moderate quantities unless there are other contraindications.

A short while ago I had the opportunity to observe the beneficial effects of alcohol in several severe cases of pneumonia. The delirium experienced by them towards the crisis was most distressing and an exhaustive state was impending. Sedatives of the usual type were valueless and morphine produced a decided depressing effect on the respiratory centres. At this time beneficial results were obtained by the giving of moderately large doses of alcohol.

In the infectious diseases when the first sound of the heart becomes feeble, alcohol has given results that have not been obtainable from any other therapeutic agent. In carbolic acid poisoning it is the most efficient antidote that we possess; it prevents the absorption and also dilutes the acid by its astringent and dehydrating action upon the tissues.

Alcohol is clearly indicated in poisoning by the cardiac depressants and is one of our most reliable agents in threatened heart failure. It is invaluable in poisoning by the cardiac depressants and snake venom, and in the elderly who are convalescing from acute infectious illnesses. I am firmly convinced that the proper use of alcohol under these circumstances shortens the convalescence and improves their appetite and sense of well-being. Depriving patients of alcohol when it is indicated would be just as bad practice as to deprive them of a night's rest. I contend that alcohol is indicated under certain conditions, and under these conditions which I have enumerated I have not found any agent that I could substitute with any degree of satisfaction.

Dixon, a British Pharmacologist states: "When alcohol is taken in strict moderation, injurious effects are yet to be proven." Lucke of the Pathology Department of the University of Pennsylvania, points out that cirrhosis of the liver is not the result of ethylation directly as is viewed by so many authorities, he main-

taining this pathology being found in wild animals.

In reply to rather extreme and probably puritanical viewpoints that consider alcohol of value only in the preparation and preservation of specimens, I would say that such men ignore the recent volumes that have appeared in the literature on the alcoholic injections for relief of pain in angina pectoris, trigeminal neuralgia, injection of the internal laryngeal nerve in painful tuberculous laryngitis, or recently in controlling pain in gangrene of the extremities, or the periarterial injection for trophic ulcers; to say nothing of the seasoned conclusion of nine out of every ten practitioners who have had much experience in treating dysmenorrhea that here alcohol is an almost ideal remedy. When we consider the great prevalence of this painful condition, and the likelihood that any spell of severe pain recurring monthly will lead to the formation of the morphine habit unless satisfactorily relieved otherwise, it does not go too far to say that this usefulness alone makes it imperative that alcohol be made available for the filling of the prescription of any reputable doctor—not a spoonful every three hours, but in whatever dosage and at whatever interval the doctor may see fit to order it.

The narcotic effect of alcohol manifests itself through its action on the central nervous system. The results of acute intoxication are too well known to need extensive discussion here. The use of alcohol in excess over long periods may give rise to effects in the central nervous system which are more permanent. Delirium tremens, or, notably in America since prohibition, forms of toxic psychosis, and polyneuritis psychosis (Korsakoff's syndrome) tend to follow. There are no gray tints in the picture of the abuse of alcohol; it cannot be painted too black.

The harmful effects of alcohol in producing or affecting specific disease conditions, other than those related to the central nervous system, require more extended notice. That chronic alcoholism adds to the death-rate following minor traumatism and in pneumonia is well-known. Authorities are coming to believe that so-called alcoholic neuritis is similarly due to a lack of vitamin B. in the diet.

That cirrhosis of the liver, in a high percentage of the cases, arises in alcoholics there can

be no question. Dr. Frank B. Mallory's exhaustive studies of the subject indicate that in approximately 72% of the cases of cirrhosis a history of alcoholic habits is obtained. Yet he has been trying for over 20 years to produce the alcoholic type of cirrhosis in a large variety of experimental animals, without success. The indications are that cirrhosis of the alcoholic type is due to an association of factors, of which alcohol is one. There are suggestions that it may serve only as a solvent of the active agent.

Hultgren, from a study of 460 cases of alcoholism over a period of years, concluded that alcohol taken daily, as it is by chronic inebriates, is not an irritant to the kidneys, but serves as a diuretic; that when nephritis occurs in the chronic alcoholic, it is probably due to some concomitant toxic agent, and not to alcohol; that the tissues which eliminate alcohol (the lungs and kidneys) are least affected by it; that the comparative integrity of the kidneys of alcoholics may be due to the small component of lipoids in the renal cells, which are not acted upon by the narcotic molecule.

The legend that alcohol was responsible for the production of arteriosclerosis has come down to us from an early period. The confusion of syphilitic arterial disease with arteriosclerosis, and the frequent relation of alcoholism and syphilis may have been a factor leading to this belief. At any rate, despite the scepticism of many authorities, the teaching has been essentially constant that alcohol was a cause of arteriosclerosis.

Wells, from postmortem material, which included many alcoholics, stated that his experience had been in harmony with that of recent German writers on the subject that the blood vessels of alcoholics show no earlier sclerosis than those of other persons, and are often in surprisingly good condition in proportion to the age of the subject.

Alcohol has been used in medicine as a food and as a drug. These uses are so mingled in much of the alcohol therapy that it becomes difficult to separate them. There are, however, some distinctive conditions in which one or the other use stands out.

From the food standpoint alcohol has the advantages that it is, perhaps, the most readily oxidizable food substance we know. Sugar is its only rival. It is an efficient producer of en-

ergy, which can save fats and proteids. It may supply up to 30 or 40% of the caloric requirements of the body. It is not convertible into glucose or fatty acids, and is, therefore neither ketogenic nor anti-ketogenic.

In the symposium on alcohol before the Medical Association of the Greater City of New York, in 1927, there was general agreement with the remarks of Dr. Harlow Brooks on the "The Use of Alcohol in the Circulatory Defects of Old Age." He thought that Hoborden had first called attention to the efficiency of the alcoholics in angina pectoris. Their manner of action might be in doubt, but at least almost any case of angina pectoris reports lessened frequency and lessened severity of the attacks, due, perhaps, to their unquestioned euphoristic action. It is in this disease in particular that this action is desirable, for I know of no other condition in which depression, apprehension and anxiety of the quiet periods almost equal the acute agony of the actual paroxysms. He recommends that the drug be taken in the form of brandy, whiskey or the heavy wines, not taken at a gulp, but sipped with the meals, if the full-flavored effect is to be obtained. In some cases the use of the drug may serve to mitigate, interrupt or abort the actual paroxysm of the disease. He recommends alcohol in some cases of hypertension of anxiety, of stressful life, and in general in such cases as have, as prominent symptoms, disturbances of emotional and mental character. In this condition the wines act better than the more concentrated liquors, and should be taken with meals or at bedtime.

In the heart of old age, especially when accompanied by tachycardia, the discreet use of alcohol is valuable, notably to lessen nervous excitability. Alcohol probably has no curative effect upon the disease, but it serves to make life more livable in a disease condition in which cure is not to be expected, and in which the natural tendency is downward.

Considering pathology, according to Kaufman, alcohol certainly plays an important predisposing role in the causation of so-called glandular atrophy of the liver. Inasmuch as the special poisonous action of alcohol is primarily upon the higher nervous centres the morbid changes of the nervous system in alcoholism are of special interest; distinguishing, however, be-

tween those pathological lesions of the brain, such as chronic pachymeningitis, edema of the brain and meninges, atheromatous arteries and the like which are common in chronic alcoholism, but which are not responsible for the destructive cerebral symptoms of alcoholic intoxication. One of the most interesting outcomes of recent investigations has been to correlate the various distinctive alcoholic disease of the brain, spinal cord and peripheral nerves on the basis of the neurone doctrine, the underlying condition being a toxemia induced by alcoholic excess and manifested now in one part of the neurone system and again in another, as shown in a peripheral neuritis, delirium tremens or a Korsakow's psychosis.

It has been, indeed, particularly unfortunate that a law should have been passed preventing the use of alcohol, since whiskey is a useful medicinal commodity and has been endorsed as a food by the Council of Pharmacy and Chemistry and The A. M. A., and also listed in Useful Drugs. I sincerely hope, that the near future will continue to bring about changes which will no longer limit the physician's skill in combating diseases by prohibiting the use of an agent which has stood the test of time, alleviating suffering, and prolonging life.

APPENDICITIS RECORD OF LAKE VIEW
HOSPITAL FROM JUNE 1, 1930 TO
JUNE 1, 1931
A STATISTICAL STUDY
*Cases diagnosed as Acute, Acute Suppurative
and Gangrenous Appendicitis*

WALTER S. SIEWERTH, M. D.
Surgical Staff
CHICAGO

Of 104 cases, 92 were diagnosed acute catarrhal, 8 were diagnosed gangrenous, 1 was diagnosed acute suppurative, 1 was diagnosed acute appendicitis, and pyosalpingitis, 1 was diagnosed acute appendicitis and lung abscess, 1 was diagnosed acute appendicitis and pelvic abscess.

No cysts or tumors were diagnosed.
Of the 104 cases reviewed 101 were operated on and three were not. Of 101 cases operated on for acute appendicitis the post operative diagnosis were:

Acute appendicitis	58
Acute suppurative	5
Ruptured appendix	8
Appendical abscess	3
Acute appendicitis and salpingitis.....	4
Gangrenous appendix	14
Acute appendicitis and cystic ovary.....	1

Acute appendicitis and fibroid uterus.....	1
Acute appendicitis and pyosalpingitis.....	2
Cystic ovary	1
Subacute appendicitis	1
Chronic appendicitis	1
Acute appendicitis and dermoid cyst of ovary.....	1
Acute appendicitis, salpingitis, cystic ovary.....	1
Ectopic pregnancy	1

Pathological report given on 86 specimens sent to Laboratory:

Acute appendicitis	56
Acute suppuration	6
Acute gangrenous	13
Ruptured appendix	3
Cystic ovary and subacute appendix.....	1
Subacute appendix	3
Dermoid cyst and acute appendix.....	1
Salpingitis, cystic ovary and acute appendix.....	1
Ectopic pregnancy	1
Chronic appendix	1

Of 86 tissues submitted the pathological report disagreed in three cases: chronic appendicitis, ectopic pregnancy, cystic ovary, chronic appendicitis, pain, nausea and vomiting with physical findings of tenderness, local rigidity and adhesions about the cecum. T. 98.6, P. 104, R. 24, Leukocyte 17,500 trace of albumen. While this is not a typical case of acute appendicitis, in view of the clinical symptoms, it probably warranted operation.

The ectopic pregnancy could be excused.

In the case of the cystic ovary the following findings made it somewhat difficult to keep from doing an exploratory:

Pain, nausea, no vomiting. Tenderness, no rigidity. History of previous attacks. T, normal, P. 84, R. 22, Leukocyte count 11,300, urine negative.

The following are the three cases not operated and coming into the hospital with preoperative diagnosis of acute catarrhal appendicitis:

No. 1. Female, 30 yrs. old, sick three days before admission. Pain, nausea, no vomiting, no chills, diarrhea, laxative. Ice bag. No previous attacks. Physical findings showed local tenderness, no rigidity. T. 99.2 P. 94, R. 22, Leukocytosis. W.B.C. 25,000. Urine negative. No consultation. No other pathology or complications. Three days in hospital. Recovered.

No. 2. Female, no age given. No previous attack. No ice bag or hot-water bag. No laxative. Constipation. Pt. complained of pain, nausea and vomiting. Physical findings revealed local tenderness and rigidity, T. 99.2, P. 90, R. 22, no leukocytosis. W.B.C. 9,250. Urine negative. No complications. One day in hospital. Pt. lived.

No. 3. Male, no age given. No previous attack. Laxative. Ice bag to abdomen. Complained of pain. No nausea, no vomiting. Constipation. Physical findings revealed local tenderness, rigidity, T. 98.6, P. 58, R. 18, Leukocytosis, W.B.C. 11,150, Urine negative. Sick two days; one day in hospital. Lived.

Of 104 cases reviewed, two of three non-operatives used ice bag and recovered.

Of 101 operative cases five used ice bags.

In these five the postoperative findings were:

1. Acute appendicitis (12 days in hospital)
2. Ruptured appendix (Peritonitis) (26 days in hospital)
3. Gangrenous appendix (22 days in hospital)

4. Acute catarrhal appendix (10 days in hospital)

5. Acute appendicitis (18 days in hospital)

The shortest time in the hospital was ten days; the longest time was twenty-six days; average time being 17 3/5 days.

Of 104 cases reviewed two cases used hot-water bags. Both were operated. Preoperative diagnosis in both cases was Appendicitis.

Postoperative diagnosis: Appendicial Abscess.

1. Female, 53 years old, complained of pain, nausea and vomiting. Physical findings: Local tenderness, rigidity, constipation. T. 102, P. 122, R. 26 W.B.C. 10,500, trace of albumin in urine. No laxative. No chills. Pt. was sick seven days before operation, and was in the hospital six days before operation. No consultation. Case drained. Pt. died after 24 days in hospital. Cause of death: General Peritonitis.

No. 2. Female, no age given. No previous attacks. Was sick two days before entering hospital. Pt. complained of pain, nausea, vomiting. Physical findings: Local tenderness, rigidity. No constipation nor diarrhea. T. 98.4, P. 104, R. 24. W.B.C. 13,200, trace of albumin in urine. Operated 1 1/2 hours after entering hospital. Postoperative diagnosis: Acute Appendicitis and Dermoid Cyst. 14 days in hospital with recovery.

Mortality 50%. No postmortems.

Of three cases not operated on none died.

Of 101 cases operated on five died. In the five deaths there was a report of a hot-water bag used in one case.

Of five deaths:

No. 1. Male, 34 years of age (42723) Sick three days before entering hospital. No previous attacks. Pain, nausea, vomiting. Constipation, no chills. Physical findings: Local tenderness, rigidity. T. 101.4, P. 124, R. 24, W.B.C. 15,400. Urine negative. No Wassermann done. Consultation. Operated two hours after admission. Preoperative diagnosis: Acute Appendicitis. Postoperative diagnosis: Acute gangrenous Appendicitis. Pathological diagnosis: Gangrenous appendicitis. Complication: Pelvic peritonitis, urinary retention. Operation: Drainage. Pt. died on fifth day. No postmortem. Cause of death: Acute Gangrenous Appendicitis and Peritonitis (Death certificate).

No. 2. Female, 53 years old. (42272) Sick one day before admission. Hot-water bag used. No previous attacks. No laxative. Complaint on admission: Pain, vomiting, constipation. No chills. Physical findings: Local tenderness, rigidity. T. 102, P. 122, R. 26, W.B.C. 10,500. Trace of albumin. Sick seven days before operation. No consultation. Died after 24 days in hospital, 18 days following operation. Preoperative diagnosis: Acute Appendicitis. Postoperative diagnosis: Appendicial abscess with general peritonitis. No tissue submitted to the laboratory. Cause of death: Perforated gangrenous appendicitis, appendicial abscess and general peritonitis (Death certificate). No postmortem. No consultation. Died after 24 days in hospital, 18 days following operation. Preoperative diagnosis: Acute appendicitis. Postoperative diagnosis: Appendicial abscess, with general peritonitis. No tissue submitted to the laboratory. Cause of death: Perforated gangrenous appendicitis, appendicial abscess

and general peritonitis (Death certificate). No post-mortem.

Case No. 3. Female, 2½ years old. (40939)

No laxative. Previous attack one month ago. Pain, nausea, vomiting, no constipation, no diarrhea. Physical findings: Local tenderness, rigidity. T. 101.2, P. 104, R. 32, W.B.C. 17,500. Urine negative. No Wassermann done. No coagulation. Sick three days before operation. In hospital 4 hrs. before operation. Case operated and drained. Appendix not removed, but abdomen drained. Preoperative diagnosis: Ruptured appendix. No tissue submitted to laboratory. Died three days after operation. Postmortem. Cause of death: Peritonitis.

Case No. 4. Female, 62 years old. (40787) No previous attacks. Previous hysterectomy. No laxative. Sick two weeks before admission. Complained of pain. Physical findings reveal: no local tenderness, no rigidity, no constipation. T. 99.6, P. 98, R. 22, W.B.C. 11,400, urine negative. In hospital 18 hours before operation. Appendix removed, abdomen drained. Preoperative diagnosis: Ruptured appendix. Postoperative diagnosis: The same. Pathological diagnosis: the same, with appendiceal abscess. Died on 7th day. No consultation. No postmortem. Cause of death: Appendiceal abscess with peritonitis (Death certificate).

Case No. 5. Female, 60 years old. (41383) No history given at all. No physical findings. No history of length of illness. No consultation. Laboratory findings: W.B.C. 20,700, urine negative. In hospital one hour before operation. Appendix removed, abdomen drained. Preoperative diagnosis: Acute gangrenous appendicitis. Postoperative diagnosis: Gangrenous appendicitis with a complication of myocarditis.

Pathological report: Gangrenous appendicitis. Pt. died after fifth day. Postmortem done. Cause of death: Pulmonary embolism of right upper lobe.

In 104 cases there were five deaths or 4.87%.

Of the five deaths, postmortems were done on two cases or a percentage of 40%. Causes of death:

1. Peritonitis. 2. Pulmonary embolism.

Of the three non-operated cases the days in the hospital were: 1 case, 1 day; 1 case, 3 days; 1 case, 6 days.

Average number of days sick 3½ days.

In 101 operated cases, the hours in hospital before operation varied from one-half to six days. Average ten hours.

Of 96 operated cases with recovery from operation the days in hospital varied from 8 days to 57 days with average of 14.4 days.

Of 101 operative cases, complications were as follows:

Pulmonary T. B.	1
Mitral insufficiency	3
Conjunctivitis	1
Diabetes	2
Fracture of zygoma	1
Pharyngitis	1
Pregnancy	2
Urinary retention	1
Purulent bronchitis	1
Varicosities of right leg	1
Transfusion	1
Myocarditis	1

Associated pathology:

Hour glass constriction of appendix	2
Cecal adhesions	8
Dermoid cyst of right ovary	1
Pelvic abscess and salpingitis	2
Right cystic ovary	5
Ectopic pregnancy	1
Local peritonitis	14
Thrombosed mesentery of appendix	1
Appendiceal abscess	8
Pelvic peritonitis	2
General peritonitis	2
Bowel adhesions	2
Previous hysterectomy	1
Phimosis	1
Right salpingitis	2
Fecolith	5
Chronic bilateral salpingitis	1
Right subacute salpingitis	2
Retrocceal appendicitis	2
Multiple fibroids, cystic ovary and bilateral salpingitis	2
Adhesions of right tube and ovary	2
Bilateral salpingitis	1

Of the 104 cases diagnosed Acute Appendicitis the following symptoms were noted in frequency:

Pain	99
Nausea	71
Vomiting	46
Local tenderness	98
Rigidity	72
Temperature (above normal)	82
Pulse (above 90)	70
Respiration (above 24)	14
Leukocytosis (above 10,000 or more)	83
Urine negative	58
Chills	4
Constipation	31
Previous attacks	29
Diarrhea	6
No record of white count in cases	6
Trace of albumin in urine	23
Pus in urine	1
Pus, albumin and sugar in urine	1

Of 101 cases operated on 54 were drained.

Of 104 cases diagnosed acute appendicitis, nine had laxatives before admission, and seven were drained because of perforation.

Of 101 operative cases there were eighteen perforations.

In 104 cases 53 were males and 51 females.

In 82 cases where age was recorded the age varied from 2½ years to 62 years; the average age being 26.5 years. T. ranged from 98.6 to 105.4; average 102.2. P. ranged from 58-130; average 105. R. ranged from 16 to 36; average 22.7.

Total number of cases having previous attacks were 29. Of these 29 cases: 25 had one previous attack, 1 had four previous attacks, 2 had two previous attacks, 1 had three previous attacks.

Of 104 cases there were 14 cases of pediatrics (under 12 years). Of 54 cases drained, 2 smears were made. Both showed colon bacilli infection.

Coagulation tests were done in 14 cases, ranging from 2½ to 6 minutes. Average coagulation 4.07 minutes.

Consultations were held on 9 cases; average 8.65%.

In one case where transfusion was done the type was four.

SUMMARY

1. In the majority of cases the preoperative diagnosis was correct and operation was indicated.
2. Pathological report of operative findings warranted operative interference.
3. In the five operative cases using ice bags, the average time in the hospital was $17\frac{3}{4}$ days. The average number of days in the hospital of those in which no ice bags were used were 14.4 days.
4. Of 2 cases using hot-water bags both developed appendicial abscesses: Both were operated on. One died after 24 days in hospital. The other recovered after 14 days in hospital.
5. Complications are not necessarily a contraindication to doing surgery if necessary.
6. Classical symptoms of pain, nausea, local tenderness, rigidity and temperature with leukocytosis in this series stand out quite definite in the diagnosis of Acute Appendicitis.

MORTALITY BY OTHER MEN

Warbasse, James Peter. Mortality in several hundred consecutive cases of all kinds 2-7%. If operated on sooner mortality would be less.

Da Costa, John Chalmers, quotes in 100 consecutive cases of grave Acute Appendicitis operated on by Kern, Hearn and DaCosta in Jefferson Hospital 8 deaths.

Richardson, Maurice reports death rate of 18% of gross acute appendicitis in 750 cases.

Deaver, John B., quotes 17.8% deaths in 144 cases in Lankenaw Hospital.

In the Mayo Clinic in May, 1912, there were 2 deaths in the 347 cases of acute and suppurative appendicitis operated on.

Deaver, from September 1, 1902 to September 1, 1903, cites 566 cases with a mortality of 5%.

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THE PREVENTION OF MALPRACTICE SUITS

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The prevention of medical malpractice suits is a subject of such great importance that some of our best men and minds have given the subject much thought and study. But with all this, these suits continue to increase in number.

I discussed this subject briefly in a paper published in 1932¹ but believing that it requires much more talking about among physicians, and that the only way it can receive that, is for it to be called to the attention of the general run of the profession, I am presenting it here and now, elaborated and enlarged, for consideration by my general practice confreres.

Statistical compilations show that malpractice suits against physicians, surgeons and medical groups and institutions are increasing to an alarming degree.

There is no definite single reason for this really vicious condition. The causes of the increase are apparently such a twisted and distorted mass of contradictions that the medical profession is not in a position to accept the reasons, or to modify them, under the present conditions.

Unquestionably, there are numerous important causative factors, both within and outside of the profession, which are apparently acting as fuel to the flame, and it is because the victims of these malpractice suits are so frequently physicians and surgeons of the highest type and character, that we feel impelled to suggest a method by which this iniquitous evil may be materially abated by action and activity within our own ranks.

While it is true that the relative number of malpractice suits in which the final judgments are rendered against the physicians are few, as compared to the number of suits started, it is none-the-less a fact that even if the physicians against whom the suits are filed do finally win, the undesirable publicity, the worry, grief, etc., occasioned by the suits can never be adequately compensated for, by insurance or any financial protection.

1. How We May Reduce the Number of Malpractice Suits, *Radiology*, Vol. XVIII, No. 3, P. 628 (March, 1932).

Malpractice suits brought against physicians, surgeons, groups or clinics, in which two or more physicians have not played an exciting part are few and far between. Because of this, the most important preventative—or perhaps I better say prophylactic—remedy toward the abatement of these suits, is to institute some active method of procedure within our own ranks to curb and silence loose and malicious tongues from peddling uncalled for and entirely unnecessary innuendoes, or from throwing out suggestions or allegations of negligence, incompetence, ignorance or wrong treatment. This is particularly true when for any reason they succeed to or take over the treatment of patients or cases previously attended by other physicians.

Exactly how many malpractice suits are actually incited by such unnecessary tongue wagging can of course be only guessed at, but unquestionably the number is very large. Any one with much contact or experience knows that too freely discussing the merits and demerits of his fellow practitioners, is bound to tend toward dissatisfaction, and this dissatisfaction, acting as a spark, is easily fanned into a flame and thus results in the conflagration—a malpractice suit.

There is, and can be no question about the existence of this condition and that it reacts against the high as well as the low in the medical profession. This is all the more deplorable when we realize that the statistics of malpractice cases show us that these suits are relatively few and seldom brought against osteopaths or chiropractors, because they have been instigated or incited by the too loose or blabbering tongues of their fellow cultists.

The available data proves that while physicians will incite and actually stimulate the bringing of malpractice suits against other physicians, it is decidedly a rare event when we find a physician inciting or stimulating the bringing of a suit against an osteopath, chiropractor or other cultist.

It is indeed a sad, but none-the-less true, commentary upon the honor and charity of our profession, that physicians are able to find plenty of time and ample reason to imply incompetence, negligence or wrong treatment to those of their own kind, at the same time re-

fraining from similar action when treating or attending patients who have left cultists because of dissatisfaction, failure to secure relief or any of the numerous reasons for so doing. *And this in the face of the scientific fact that the cultists' treatments unquestionably result in a far greater amount of damage than does regular medical treatment.*

It is with the idea and purpose of advancing a remedy for this condition, which can and should be instituted, or at least seriously considered by organized medicine that the writer is presenting this, and although it is aimed to be a prophylactic measure rather than a remedial measure primarily, there is no question that at times defensive litigation in the form of counter suits for libel and slander, may be an effective check to some of the wagging tongues.

The figures definitely show that the great majority of judgments in malpractice suits are finally rendered in favor of the physician defendants, and if they were—and many of them certainly are—instigated by the lying and disparaging remarks of some other physician, *why would it not be a good and entirely licit suggestion to advise every physician who has been thus unjustifiably maligned, disparaged and libeled to start a suit for slander and (or) libel?*

It is our belief that every unjustifiable malpractice suit which is based on slanderous statements, should be met by the immediate filing of a suit for slander. The fact that most unjustifiable malpractice suits are lost by the plaintiffs, leads us to think that the testimony given at such trials may be of such a nature that it may be useful in the physician's slander suit.

Another observation, and probably a most important one in malpractice suit prevention, is the certain and undeniable fact that very few—*practically none*—of these suits can be successfully prosecuted without the use of expert medical testimony. The presence of this element gives to us an important and extremely effective means of combating the malpractice suit evil, if it would be used.

We of course do not deny that any physician has the right to testify for whomsoever he pleases or elects; but when such testimony borders on, or is actual perjury, and is the result or the product of collusion, we feel that we

have the right—and should assert such right—to take a hand.

It is a common observation, that the apparent willingness and even eagerness of some members of the medical profession to testify against their fellow practitioners, has done much to create judicial impressions that are apparently reflected in some of the judicial opinions, that inasmuch as the state has granted the physician the right to practice his profession, it may demand expert testimony from them without adequate—expert's—compensation.

It cannot be truthfully denied, and no sensible person would attempt to deny, that honest differences of opinion may exist in many of the matters pertaining to medicine and surgery and that our legal rights to be permitted to give testimony for the purposes of aiding justice ought not under any circumstances or conditions to be abridged. Nevertheless, when due cognizance is taken of the fact that by far the greater number of malpractice cases against physicians and surgeons result in decisions in favor of the defendants, we cannot be far amiss in stating in no uncertain language, that even honest differences of opinion among the members of our profession are rarely sufficiently at variance to form legal grounds for damages or redress.

We have heard good competent trial lawyers (for the plaintiff in malpractice cases), say that no physician's or surgeon's testimony aids any malpractice case unless it is of distinct value as evidence to prove that the defendant physician *actually did something wrongfully or negligently, or omitted doing something that he should have done*. In other words, we are of no use or value unless we say nasty, mean things about the other fellow.

Unquestionably and unqualifiedly, no medical witness when giving expert medical testimony against a physician in a malpractice suit, can possibly refrain from depreciating the defendant physician, and at the same time be a useful and valuable witness for the side for which he is testifying. The mere fact that he is giving testimony against another physician, is a strong suggestion to the mind and perception of the jury—and even to the judge—that he thinks that the defendant physician did

something wrong. It must be admitted that such depreciation, even if based entirely upon differences of opinion, may be justified; but when measured by the yardstick or gauge of the decisions rendered in such suits, it promptly becomes evident that the depreciation and disparagement of the defendant physician is usually not justifiable or merited.

For these reasons and the absence of other effective legal remedies, except that of a counter suit for slander and libel, it seems to the writer that it would be highly beneficial and salutary if organized medicine could plan to abate or suppress this evil, from an ethical, just and moral basis.

There has been some activity manifested in the direction of determining reasons and remedies, by a few medical bodies; but no active stand has been taken and nothing concrete or definite has resulted.

We believe, that there is no good reason why every member of every regular medical society against whom a malpractice suit is being brought, in which another member of the same society contemplates giving testimony for the plaintiff and against the physician, should not receive some protection on ethical ground from the society.

Every member of every medical society should be forbidden to voluntarily testify against another member of the society in a malpractice suit, unless and until a board or committee authorized for that purpose by the society had reviewed the essentials of the proposed testimony, under penalty of expulsion from that society.

Malpractice suits as a rule do not require great haste. The time necessary for reviewing the proposed testimony to be given by voluntary witnesses need not play a very important part. Besides this, if a physician is honestly of the opinion that his fellow practitioner was actually guilty of malpractice and if his opinion is based upon a good reason, other than malice, jealousy or personal animosity, the reviewing committee would certainly be willing, yes even glad, to sanction and allow such testimony against a negligent or otherwise guilty physician. It altogether too frequently happens nowadays, that the medical expert witnesses for the plaintiff in malpractice cases, volunta-

rily gives garbled, misleading and deliberately false testimony that is entirely unjustified, from the aspect of accepted standards of modern teachings; such testimony being actuated more often by spite, jealousy and personal animosity than because of the love of justice.

We must not forget, that while malpractice suits are purely of a legal nature of themselves, their outcome and end results depend in a very large measure upon the character, quantity and quality of expert testimony introduced. Viewed from another angle, the medical expert witnesses really hold the entire outcome of a very large proportion of these cases in their own hands, so that by presenting the substance of the proposed testimony to be given for the plaintiff and against the physician defendants in such suits, before the reviewing committees before the trial, valuable prophylactic action may be taken if needed.

This could be easily moulded into an ideally practical method and put into effect. Some competent physician, who is interested in the subject, could be delegated to investigate each malpractice suit that is brought against a member and if such investigation discloses that another member of the society is scheduled to appear as a voluntary expert witness in the case, the latter should be required to submit the nature and substance of his proposed testimony to the investigator, who, in behalf of the society, should have unlimited consultatory privileges among its members who might have special knowledge of the medical points involved in the litigation in question. The investigator might then submit the proposed testimony to two or three competent consultants for their written opinions. If after such investigation and review of the impressiveness of the consultants' opinions, the report is favorable to the proposed testimony to be given against the defendant physician, then the physician witness could and should receive every possible encouragement to testify. But if, on the other hand, the consultants report that the proposed testimony would *wrongfully and improperly depreciate and disparage the defendant's reputation and not serve to advance the cause of justice*, the investigator could and should notify the plaintiff's physician who proposed to give the expert testimony, that *if he give such*

testimony he will be subject to discipline, for unprofessional conduct.

It must of course be understood, that absolutely no publicity need nor should be permitted to enter into this plan or program and that all of it must be strictly and most rigidly *entre nous*. The consultants to whom the investigator submits the proposed testimony need not know the names of the men involved, and the medical witness need not know who the consultants were who passed upon the advisability of his testimony. The investigator could and should be the only one who need know the names or identity of the parties involved in the entire affair, unless or until cause for expulsion (or other discipline) from the society would cause the disclosure.

Even an unscrupulous physician, who might claim that he testified as an involuntary witness, need not defeat this plan; because it would be clearly obvious to and easy for an experienced investigator to learn whether the testimony was fair or biased, or whether the witness had planned to have himself subpoenaed, in order to evade the prior review of his testimony. Either reading the transcript or listening to the testimony would be ample for any one with judgment to determine if trickery was used to avoid the usual procedure in such cases.

Unquestionably, such a plan or scheme based upon these principles, would greatly reduce unjustified malpractice suits against members of medical societies, while it would not affect the outcome of cases where real malpractice had occurred. If the time ever comes when physicians do not give garbled, indiscreet or imprudent testimony against each other, the need for the brains and bravery required to fight unjustifiable malpractice suits will be removed and may be used for more profitable purposes, and the wolves who hang around the edges of the herd, the malpractice lawyers, will not venture to go very far with such cases, when it becomes impossible for them to secure expert testimony.

It is no secret that influences outside of the medical profession are at work with the purpose of stimulating malpractice suits. These range from organized gangs who operate in typical racketeer style, sometimes after the

fashion of the old "badger game," on the personal injury racket against transportation companies; to secret investigation as to who among our profession do not carry insurance against malpractice suits, so that they may entrap and intimidate them.

It would be well if all physicians be more cautious in their willingness to give expert testimony in malpractice suits and to remember that no matter whether such suits are the outcome of organized racketeering and probably unjustifiable, or even if they are justifiable—as they occasionally are—these suits are practically impossible of successful prosecution without the use of expert medical testimony.

The writer desires to state that much of the foregoing is not original, but is an elaboration of the ideas of a lawyer-physician, who promulgated same several years ago.²

During the last few years the cost of insurance against—and of defense by the uninsured, as well as by the medical societies—malpractice suits has been increased. The increase in the number of these suits and the additional cost of their defense has exacted an enormous financial toll from the medical profession. In addition to this, indications point toward the likelihood of their further increase, unless we take some drastically aggressive action within our own ranks.

The foregoing plan, if adopted, while incapable itself of preventing the filing of malpractice suits, would, if conscientiously enforced, go a long ways toward reducing their incidence; besides what is more important, it could be made entirely possible, *within our own ranks, with means now at our own disposal and entirely without the necessity of any additional legislation.*

25 East Washington Street.

A CONSIDERATION OF PYO-URETER WITH CASE REPORTS

EDWARD WILLIAM WHITE, M. D., F. A. C. S.
CHICAGO

The following presentation on pyo-ureter is not an attempt to enlighten you on a vague or unusual surgical entity which is chiefly of academic interest, but is an urge to stimulate

interest in an important subject which has not been over evaluated. We have long recognized certain well defined indications for ureterectomy or partial ureterectomy coincident with nephrectomy, which has obviated the vicissitudes notable with later ureteral operations following nephrectomy.

The literature on this absorbing subject is very scant, as we noted after a careful perusal covering a period of twenty-five years. Present day progress depends chiefly on past experiences, and the few case reports tabulated were of small assistance in guiding us in the correct rational of case management. We experienced considerable difficulty in arriving at definite and accurate indications for subsequent ureterectomy following nephrectomy or nephroureterectomy as a single procedure in certain cases.

The incentive for this treatise was further fostered by a series of interesting experiences with non-tuberculous pyo-ureter coming to my attention in recent years and of which I am frank to admit, previous to a more intelligent understanding of the physiology of ureteral peristalsis and particularly of the ureteral stump, we were floundering in an uncharted area without previous experiences to guide us.

The role of the ureteral stump and the often noted phenomenon of ureteral peristalsis, following nephrectomy, appears to be the crux of the situation and certainly alters the prognosis in a given case.

Latchem and Frounstein in their splendid articles on "Empyema of the Ureter" and "Experimental studies of the Ureter after Nephrectomy" definitely established the fact that the rhythmical peristaltic contractions of the ureteral stump depend partially on the nerve supply, the centers of which were located in the ureteral walls or surrounding connective tissues. Further, and equally as important is the observation that the presence of pus, stone or obstruction is a requisite for continued ureteral peristalsis following nephrectomy with partial ureterectomy.

Ureteral peristalsis is of no consequence in the absence of obstruction; drainage must be free and uninterrupted in the ureteral remnant, otherwise empyema, systemic infection and a return of urinary symptoms is noted.

Surgeons have frequently noted, particularly

². Medical Jurisprudence, Carl Scheffell, Ph.B., M.D., LL.B., Blakiston's Son & Co., Phila., 1931.

in gynecological operations where a nephrectomy had previously been performed, that the unobstructed ureter of the same side almost regardless of the former renal pathology, had contracted down to a small uninteresting cord. This is particularly manifested in tuberculous ureteritis and certain unobstructed dilated ureters.

Latchem distinctly informs us from experimental observations that the muscular coat of the ureter hypertrophies when advanced obstruction is present, and atrophy is noted in the absence of obstruction, hence an absolute and accurate knowledge of the state of the ureter is of prime importance in all nephrectomized patients.

As before stated we have noted definite indications for ureterectomy or partial ureterectomy at the time of nephrectomy in ureterorenal disease, but it is a common experience that the surgeon is unable to perform a complete nephro-ureterectomy simultaneously due to the condition of the patient, although the indications were apparent and well understood prior to operative intervention. Cases of large renal tumors, patients who have had previous renal operations in which the kidney lies in a bed of chronic inflammatory tissue, being densely adherent to the duodenum or diaphragm, patients who have undergone severe systemic changes and so forth, are rarely good subjects for a nephro-ureterectomy or nephro partial ureterectomy.

The foregoing might be a logical appeal for uretero-nephrectomy in all selected cases. This as we know has been advised by some urological surgeons of note.

It is worthy of comment that the ureter following nephrectomy is rarely a factor in the production of genito-urinary symptoms, and when we consider that the ureter is so frequently adherent to the duodenum or diaphragm, furthermore surprised to learn that a nephrectomy is such grave conditions as unilateral renal tuberculosis, renal tumor, pyo-nephrosis, calculus pyo-nephrosis, hyper-nephroma (so-called) will often suffice.

Latchem's reports and observations are substantiated by many clinical experiences. He has definitely established the fact that absorption of the ureteral contents, even in dilated

and infected ureters probably does not occur unless in the presence of strictures, calculus or ligatures. The unobstructed remaining ureter although contracted down to a very small lumen will quite thoroughly carry off infectious processes to the bladder.

Hyman adds interesting cases to the literature, further substantiating Latchem's experimental findings, in which he reports cases of persistent urinary symptoms such as pyuria, septic temperature and rigors following partial ureterectomies, all being due to fibrous contractions of the ureteral stump due to infection and lack of drainage.

Fronstein presents a complete resume of the work of Latchem and others and adds a case of pyo-ureter due to stricture in the pelvic ureter.

Hunt in his splendid article from the Mayo Clinic reports as follows, renal tuberculosis during the last ten years has provided the indications for nephrectomy in approximately 28 per cent of the major lesions of the kidney for which this operation was performed, however, in no instance in the series of five hundred and seventy-four cases in which nephrectomy was performed for renal tuberculosis during the years 1919 and 1928 inclusive, had he found subsequent ureterectomy recorded.

M. L. Harris, in a personal communication, reported a case in which a nephrectomy had been performed for unilateral renal and ureteral tuberculosis which necessitated a subsequent ureterectomy due to a return of symptoms in an advanced form one year later. He further experienced considerable difficulty in exposing the remaining ureter, due to intense inflammatory adhesions. Operations revealed that the tuberculosis process was wide spread throughout the area, as well as the pelvic glands and the remaining ureteral stump. Nephro-ureterectomy might have prevented this condition.

Many interesting and illuminating cases of pyo-ureter following nephrectomy in the presence of stone, stricture and kinks were reviewed and as a general consideration it is noteworthy that an infected ureter of the nephrectomized side will produce a return of urinary symptoms depending entirely, as to the presence of stone, stricture or other obstructive interferences or whether or not the innervation has been damaged by trauma and hence producing narrow-

ing, ureteritis and atony with inflammatory contraction.

Kuemmell in a review of 380 nephrectomies is of the opinion that possibly ureteral trauma plus infection is a causative factor and reports four cases.

Israel reports four cases in 900 nephrectomies.

Hyman in his splendid article on empyema of the ureteral stump following incomplete ureterectomy, summarizes his three case reports as a conclusive demonstration that the ureteral stump following incomplete ureterectomy is a very potent cause of persistent pyuria, and further calls attention to the necessity of removing the entire ureter when performing a primary ureterectomy for pyo-ureter.

Those of us who have had the good fortune or misfortune to complete a partial ureterectomy in certain of these cases, well know the many difficulties attending this formidable procedure, especially in long standing cases of pyuria and persistent sinuses following incomplete ureterectomies.

Roedelius reports two cases, causative factors being stone and stricture.

Klika's case of canalized stone in a ureteral empyema, reported in the *Zeitschrift für Urologische Chirurgie* of 1921, in which he states that the urine had produced a channel through a mass of soft phosphatic concretions in interesting, however, I feel that the canal was more likely produced by a ureteral catheter.

In considering the time ratio between the period of nephrectomy and the development of urinary symptoms necessary for a diagnosis of pyo-ureter, the literature presents the following:

In Roedelius' case of atony and stricture, seventeen years elapsed prior to the time of a return of urinary symptoms, several cases varying in duration of from one to five years were cited.

Hunt—Six weeks to five years.

Hyman—Five weeks to nine years.

Read—Two months.

Klika—Six weeks.

As a general average it was noted that most cases produced symptoms sufficiently severe to warrant assistance in from six months to three years. The time interval depends upon the character of the infection, the amount of ob-

struction, the innervation disturbance of the ureter and the thoroughness of the ureteral management at the time of nephrectomy.

The symptoms and diagnosis of pyo-ureter under ordinary circumstances should not present many difficult problems. I am convinced after personal communications and a perusal of the literature that a more careful ureteral examination and a more thorough eradication of ureteral pathology simultaneously with nephrectomy will ultimately lessen the incident of its appearance.

A return of urinary symptoms in all nephrectomized patients regardless of the condition of the remaining kidney, should always suggest the possibility of pyo-ureter. The time element for the onset of symptoms is of small value when we consider Klika's case of six weeks and Boengerma's stone case of twenty-three years. In our experience and of others we have cited, most patients complain of a return of original disturbances with possibly an exaggeration of voiding discomfort and frequency, this being due to the intense cystitis seen in all cases. General debility and septic temperature excursions were noted in all instances, being due to ureteritis, periureteritis, pus under tension and suppurative cystitis.

Dysuria to a very marked degree, progressive in character, temperature rises with slight rigors, cloudy pus laden urine, swelling in the right or left lower quadrants of the abdomen in advanced cases with cystoscopic verification will lead one to a correct diagnosis. The amount of laudable pus seen escaping from these diseased ureteral stumps is amazing, tooth paste in appearance and on slight abdominal pressure will curl out over the bladder floor in a very weird manner.

Treatment: Surgery is infinitely the procedure of choice, consisting of a thorough and complete ureterectomy if possible, and free drainage at both angles of the wound. I feel that thorough drainage cannot be over emphasized. Pelvic cellulitis due to peri-ureteritis is ever possible and must receive careful and efficient attention.

The usual muscle splitting incision of Gibson is used for ureteral approach; however, one often meets with formidable difficulties due to the dense fibrous adhesions and an absolute loss of cleavage. In certain cases it is surgically im-

possible and imprudent to remove the ureter especially in cases of large infected tortuous hydroureters, in which all normal landmarks are destroyed and adhesions with pelvic peritonitis present. Instances of this type improve best under later incision into the pus sac, free constant irrigations and thorough drainage. Cases are reported in which large dilated ureters were sutured externally and daily lavage instituted, the remaining ureter being extirpated at a later date. I am personally opposed to this procedure, if it is possible to remove the ureter, as past experience has demonstrated quite clearly that the proper time for a ureterectomy is during the nephrectomy if the patient's condition will permit and if a surgical possibility.

Ureteral stump irrigations cystoscopically are of little permanent value, admitting, however, that in most cases we have noticed a temporary alleviation of all symptoms following.

We have found that such palliative measures as stricture dilations, enlarging the ureteral orifice, uretero-lithotomy for removal of obstruction, whether stricturous or stone in the presence of a well defined pyo-ureter is rarely of permanent value.

Case records:

Case 1. J. M., male, aged 28 years, entered the hospital December 8, 1924, after a two weeks illness, complained of severe pains about Petit's triangle and radiating along the course of the left ureter. Patient has had similar attacks of twelve to twenty-four hours' duration extending over a period of five years. Inspection revealed an acutely ill, greatly emaciated man who was sorely in need of intelligent medical or surgical aid. Accurate past or present history was difficultly elicited due to his physical status.

The essential features of his physical examination revealed a large palpable mass corresponding to the left kidney in the left flank, exquisitely sensitive and freely movable. Tentative diagnosis, calculus pyonephrosis.

Ureteral catheterization under saoral block anesthesia was performed, separate urines collected and left pyeloureterogram made. Right segmented urine was essentially negative, the left contained a wealth of pus and blood. No tubercular bacilli were isolated. X-ray revealed a dense shadow, irregularly quadrilateral about two inches square in the region of the pelvis of the left kidney. The renal shadow of the same side was greatly enlarged extending by its lower pole to the middle of the body of the fourth lumbar vertebra. A small dense shadow also in the course of the pelvic ureter. Right kidney shadow normal in size, contour and position.

Pyelogram more clearly accentuated the foregoing

citation and more accurately localized the renal and ureteral shadows.

December 12, 1924, left nephrectomy and partial ureterectomy was performed with difficulty due to firm adhesions, short pedicle and extreme condition of the patient. A nephro-ureterectomy which we considered advisable would not have been prudent due to the patient's condition as stated before.

The convalescence was stormy, characterized by frequent attacks of chills, rigors and elevation of temperature, and a persistent discharging fistula in the left flank.

February 18, 1925, a large abscess cavity pointing in the left inguinal area was drained daily, irrigated and packed: same finally closed and patient was discharged on March 24, 1925, with dry renal and inguinal wounds. The patient on being discharged was cautioned as to the possibility of future difficulties due to the remaining stone and advised to return for further check-up if difficulties should arise.

March 30, 1932, seven years later, patient readmitted to the hospital with a history of frequency and burning on urination and an ever constant cloudy urine. The past year he had experienced mild seizures of chills and slight elevations of temperature, and within the past fourteen days had been quite acutely ill with severe dysuria and frequency associated.

Cystoscopic examination demonstrated thick creamy pus discharging in great quantities from the left ureteral orifice and intense generalized cystitis. The right renal studies remained essentially negative. Firm pressure on the lower abdomen was followed by a deluge of pus from the left ureteral orifice. A diagnosis of pyoureter of the remaining ureteral stump and the presence of calculi was given and operation advised.

Frequent cystoscopic irrigations and drainage of the ureteral stump was always followed by a noticeable improvement in symptoms, however; the patient gradually retrogressed and operation was performed April 10, 1932.

The left ureteral stump was exposed, same being approximately three and one-half centimeters in diameter and in its lumen was a calculus the size of a small marble; around and above the stone was an abscess cavity filled with pus. The ureter and stone were removed and the part thoroughly drained; a protracted convalescence followed and patient died on the 28th day of pelvic cellulitis and hypostatic pneumonia.

Tuberculous pyo-ureter is not within the scope of this treatise; however, in order to emphasize its relative rarity, I shall diverge briefly for its consideration. In a general resume of the literature the reported cases of ureterectomy following nephrectomy for tubercular ureteritis are extremely rare. In a series of 222 cases reported by Dr. Jeck from the Bellevue Hospital Urological Department, 98 cases were tubercular and in but one was a subsequent

ureterectomy performed for tuberculous pyoureter.

Young reports one case in which a nephroureterectomy was performed for renal tuberculosis and subsequently the patient developed miliary tuberculosis, due to an extreme tubercular involvement of the deep pelvic wound.

Experience gleaned from the literature and our own limited knowledge has clearly demonstrated that tuberculous ureteritis in the absence of stone, stricture and kinks, all of which interfere with drainage, will generally subside, and even the large dilated ureter will contract down to a small fibrous cord. The following personal case further demonstrated the foregoing.

Case 2. J. R., male, aged 44 years, operated on at Alexian Brothers Hospital July 19, 1922. A perineal section and cystotomy were performed for vesicle calculus and impassable strictures in the membranous urethra. At the time of cystotomy pus was seen passing from the right ureteral orifice and five months later, due to failure of bladder closing, a right nephrectomy and partial ureterectomy were performed. Operation proved the tentative diagnosis of renal tuberculosis and a tubercular kidney and dilated tubercular ureter were demonstrated.

The patient left the hospital with recurrently opening bladder fistula. February 8, 1923, one year later, patient returned due to the constant annoyance of his suprapubic fistula. A ureterectomy was advised on the theory that it may favorably influence the bladder closure.

February 23, 1923, through a muscle splitting operation the right ureteral stump was exposed and found to be not much larger than the normal ureter, however, firm and cord like. The bladder opening was only partially improved by the ureterectomy and the patient was required to wear a small pad suprapubically when dismissed from the hospital two months later.

Case 3. Patient, male, aged 58 years, entered our service September 15, 1929. Urological and roentgenologic studies revealed bilateral renal calculi, calculus in right pelvic ureter and a functionless right kidney. September 24, 1929, right lumbar incision presented a calculus pyo-nephrosis which was drained, multiple stones removed and approximately two quarts of thick creamy pus was liberated. A discharging sinus persisted for about seven months after dismissal from hospital and finally closed. Patient left the hospital with knowledge that a small stone remained in the right pelvic ureter and a symptomless stone in the left renal parenchyma.

The following two years the patient complained of transient attacks of fever, cloudy urine and dysuria. Two weeks before entering the hospital the old scar spontaneously opened and discharged sero-sanguineous material and pus.

August, 1932, three years later, a right nephrectomy was advised and a mass of capsule and necrotic kidney substance was removed. The part was thoroughly packed with iodoform gauze and a discharging sinus persisted with marked dysuria until December, 1932, at which time a complete ureterectomy was performed. The pelvic ureter measured about three centimeters in diameter and contained in addition to a small calculus a typical pus sac and extensive ureteritis.

Malignant disease of the ureter as a primary involvement is extremely rare although we have all noted secondary ureteral involvement from renal and bladder malignancy, the former by direct extension, the latter by invasion. That papillary epitheliomata of the lower ureter will cause pyo-ureter due to obstruction is demonstrated in the following case.

Case 4. Patient, male, aged 48 years, entered the hospital, September 1928, complaining of blood in the urine, intermittently, loss in weight and frequency of urination. Roentgen ray negative except for an enlarged right renal shadow. Urine analysis; blood and pus cells in abundance and negative for tubercle bacilli. Cystoscopic study presented a group of papillary growths protruding from the right ureteral orifice which prevented the introduction of a ureteral catheter. Left ureteral catheter passed to left renal pelvis and negative findings reported. October 14, 1928, the right kidney was explored and a large hydronephrotic kidney was removed. The convalescence was uneventful except for a discharging wound which continued for two months and finally closed.

Patient returned March 18, 1929, as was expected with a return of intermittent hematuria and slight afternoon temperature. March 25, 1929, the protrusion of the neoplasm at the ureteral orifice was thoroughly fulgurated and a complete ureterectomy was performed. The ureter was literally filled with papillary epitheliomata, considerably dilated and infected. The post-operative history was uneventful.

Conclusions and summary:

1. I have hereby presented for your consideration a brief study of pyo-ureter with case reports and a resume of the literature.

2. Pyo-ureter is relatively rather uncommon, yet it is sufficiently prevalent to warrant our careful attention in all nephrectomized patients in which a return of symptoms prevail.

3. Pyo-ureter is a severe menace to future health and well being and requires precision and courage in its management.

4. Palliative cystoscopic measures are generally temporary in results, whereas radical ureterectomy including the intramural ureter is a more logical and satisfactory procedure.

5. Obstruction and innervation disturbances

seem to be the chief potent cause in the production of this malady.

55 East Washington Street.

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LEGISLATION FOR THE CONTROL OF HYPNOTIC DRUGS

JOHN B. ROSS, M. D.

CHICAGO

A condition exists at present which sorely needs to be remedied. This is the practice of pharmacists selling hypnotic drugs to customers without a physician's prescription.

Anyone can go into a drug store and purchase allonal, amytal, nembutal, and other phenobarbital preparations in any desired quantity. It follows, inevitably, that they take it in any desired quantity, ignorant of, or ignoring, the harmful results of such a practice.

These drugs are habit forming. A custom once begun of using a hypnotic drug to produce sleep, relieve pain, or for any purpose, may result in a vicious habit which is very difficult to break. Such a habit may ruin one's life.

There have been many deaths caused by this laxity of the law. Recall the numerous cases reported in the newspapers of illness or death resulting from an "overdose of sleeping medicine." These drugs are depressing to the heart,

and taking them too often or in too large a dose weakens the heart seriously. Moreover, there are many persons who, not knowing they possess a diseased heart, prescribe their own drugs, oblivious of the danger they are incurring by such a procedure.

The dispensing of drugs such as morphine, codine, and other opiates is controlled by the government by means of the Narcotic Law, which requires that a physician's prescription be presented upon the purchase of any narcotic drug. Why not extend this law to include the dispensing of hypnotic drugs such as allonal, dial, amytal, and other phenobarbital preparations, which are fully as dangerous as the ones controlled by the law at present. Several states, recognizing the need for such legislation, have provided regulations to control the hypnotic drug traffic. When will Illinois act to curb this menace?

2030 Irving Park Boulevard.

FOUR HUNDRED AND NINETY-SEVEN FOREIGN BODIES IN THE STOMACH

The practice of swallowing all sorts of articles by some lunatics is well known, but the discovery of 497 articles, weighing 3½ pounds, in a man's stomach constitutes a record. An inquest was held at the County Mental Hospital, Upton, near Chester, on the body of a farmer, aged 28, who died in the hospital following an operation. In his stomach were found 497 articles, which included 200 nails from half an inch to 4½ inches long, 36 staples, 43 phonograph needles, 6 teaspoons, 3 table forks, 7 coins, 6 brace buckles, 3 door keys, 3 penknives, 3 S-shaped meat hooks, 10 safety-pins, 4 sewing needles, 6 ordinary pins, 13 pieces of glass or earthenware and 9 screws. The medical superintendent said that the man had a delusion that his stomach was too smooth. Death was due to ulceration of the stomach and hemorrhage.

—London Corr. J. A. M. A.

"If you wish to exploit her, just study her goiter
And examine her endocrine glands;
With Lugol's solution you get resolution
Of the tumor no man understands.
The medical man gets results if he can;
And the X-ray may cure—or play hob;
The surgeon is sure every case he can cure
When old nature falls down on the job,
One says iodine and your case will do fine,
But another says 'No—cut it out,'
Puts the boob from the sticks in a hell of a fix,
Scarcely knowing what he is about."

—E. B. C. in J. A. M. A.

A BITTER EXPERIENCE

The street sweeper was weeping bitterly as he pushed his broom along the curb.

"What is the trouble, my good man?" asked a bystander.

"Sir," said the street sweeper, "there has been an accident here. One of my friends was killed and I am forced to sweep away the debris."

"Oh, I see," said the bystander, "just scraping up an acquaintance."

—*Chicago Phoenix.*

CASH DISCOUNTS FOR PATIENTS

It is not altogether a bad idea to offer patients a ten per cent. discount if they pay before the tenth of the month. It speeds up collections and serves other purposes. It gives a good method of sizing up the patient; if he does not accept the discount he is either in difficult circumstances or is not a desirable patient.

Many people do not include illness in their budgets. No matter where one lives or what one does about it, the average person will have six illnesses a year, three of which will be "colds." He should prepare for these illnesses and if he knows that a ten per cent. discount is waiting for him he may prepare ahead.

Some will argue that their surgical bills are already reduced to a minimum and that they cannot offer any further reduction. However, the average surgeon would sacrifice another ten per cent. to get his payment by the tenth of the month.

Some physicians charge extra for charge accounts and the patient who pays cash should have the benefit of the minimum fee.

Years ago a physician was governor of Rhode Island. He worked all day at the State House and practised medicine at night. His pockets were always full of change and each one who paid him cash received a ten per cent. discount.

SELECTIVE COLLAPSE OF LUNG WITH PHRENICOTOMY COMPARABLE TO THAT WITH PNEUMOTHORAX

C. M. Van Allen, Peiping, China (*Journal A. M. A.*, July 2, 1932), calls attention to the fact that when a few hundred cubic centimeters of air is injected into the pleural space of persons with tuberculosis of one lung lobe, the slack given by the air to the elastic pull of the hemilung is frequently taken up more by the diseased than by the normal lobes, with the result that the air resides principally over the diseased lobe and collapses it selectively. He refers to the occurrence of selective collapse of the lung in pulmonary tuberculosis after phrenicotomy and compares it in principle to selective collapse after pneumothorax. For both operations, differentiation is made between the deflation of the diseased tissues which occurs immediately and is probably due to increased elastic tone of the lung, and that which occurs gradually and is due to formation and contraction of scar tissue. The author believes that the increased elastic tension of the lung, in the first type, is due largely to thickening of the pulmonary septums and membranes from vascular congestion and interstitial deposit of inflammatory fluids and cells.

Society Proceedings

GREENE COUNTY

Regular Meeting of Greene County Medical Society was held in White Hall, Sept. 8, 1933, at 6:00 P. M.

After a chicken dinner and social hour at Piper's Cafe the society was called to order in the public library building at 7:00 P. M. by the president, Dr. O. J. Gause. Minutes of the March and June meetings were read and approved. Various communications were read and disposed of, after which Dr. T. B. Knox of Quincy, Councilor for the Sixth District, gave us a very earnest and practical talk on "Medical Economics."

Dr. Lee O. Frech of Decatur read a paper on "The Cost of Medical Care and the Public's Ability to Pay." The doctor dealt with fundamentals and gave us a substantial foundation upon which to build an ethical and satisfactory procedure in the care of the indigent sick as well as those more able to pay. Dr. Harris of Quincy discussed the subject and gave us an account of the methods used in Adams County and suggested that the same or similar methods would apply in Greene County. Dr. Frech closed the discussion with some valuable and concrete examples of what had been done in Decatur.

A motion was made by Garrison and seconded by Smith that the president appoint a committee on Medical Economics, consisting of three members. Motion carried. The president was given time to select his committee.

Fifteen members and visitors were present.

The next meeting will be held in Roodhouse, Dec. 8.

W. H. GARRISON, Secretary.

FULTON-SCHUYLER COUNTIES

Fulton and Schuyler Counties joined forces to put over a special meeting at "The Virginia," Scripps Park, Rushville, September 6. Following a round of golf on Rushville's fine course, dinner was served at 6 o'clock to 170 members and guests, from 11 counties of Illinois and Keokuk, Iowa.

Dr. Charles D. Center of Quincy, president-elect of Illinois State Medical Society, presided as toastmaster in his unique way. Dr. John DeJ. Pemberton of the Mayo Foundation, Rochester, Minn., gave an address on "Rational Treatment of Hyperthyroidism" which was discussed by Drs. C. U. Collins, Don Deal and Frank Deneen. Dr. Frank J. Heck of the Mayo Foundation then discussed "Pernicious Anemia, Diagnosis and Treatment" which was further discussed by Drs. M. G. Bohrod, J. C. Redington and R. A. Harris.

H. O. MUNSON, Secretary, Schuyler County

C. V. SNIVELY, Secretary, Fulton County.

Marriages

JAMES WILSON CLARK to Miss Martha Ozita Hall, both of Chicago, August 5.

YALE NORMAN LEVINSON, Chicago, to Miss

Sally Brounstone of Montreal, Que., Canada, July 14.

PAUL GILBERT PETERSON, Chicago, to Miss Signe Marie Peterson of Orfordville, Wis., August 2.

ROBERT SYDNEY SMITH, East St. Louis, Ill., to Miss Helen Kempster of St. Louis, June 10.

ROBERT L. WHITESIDE to Miss Grace Rendleman, both of Jonesboro, Ill., June 26.

Personals

Dr. William W. Eichelberger, Alton, addressed the Madison County Medical Society, August 4, on "Psychiatry and the General Practitioner."

Dr. Joseph A. Campbell, Marissa, has been appointed managing officer of the East Moline State Hospital, East Moline, succeeding Dr. Cyrus H. Anderson.

Dr. David C. Straus has been appointed consultant in fractures and traumatic surgery in the recently created medical department of the Illinois Industrial Commission.

Dr. August A. Werner, St. Louis, addressed the Madison County Medical Society at Highland, September 1, on "Symptoms Which Accompany Castration, Ovarian Hypofunction and Menopause."

A recent meeting of the Macoupin County Medical Society at Carlinville was addressed by Dr. Neil S. Moore, St. Louis, on "Transurethral Correction of Bladder Neck Obstructions."

Dr. Frank S. Needham, Oak Park, is the first winner of the Vanderslice Cup of the Chicago Medical Society. The golf tournament was held at the Medinah Country Club, August 9. Dr. Needham's gross score was 80.

Dr. Hugh Young, Baltimore, Md., will deliver the Fifth Annual William T. Belfield Lecture for the Chicago Urological Society on Wednesday, October 18, 1933, at the Palmer House, at 8:30 P.M. There will be a dinner in honor of Dr. Belfield at the Hotel at 6:30 P.M.

Dr. Frederick Mueller of Chicago, Director of the Division of Orthopedic Surgery of Loyola University, was appointed as Attending Orthopedic Surgeon at Mercy Hospital, Chicago.

Dr. Thomas P. Foley, Chicago, addressed the

Will-Grundy County Medical Society at Joliet, September 20, on medical legislation.

Dr. Joseph C. Doane, Philadelphia, addressed the staff of the Paris Hospital, Paris, September 7, on "Effect of Opium on the Commerce, Literature, Medicine and the Morals of the World."

At a meeting of the De Kalb County Medical Society in Sandwich, September 28, Dr. Clement R. Martin, Chicago, spoke on anorectal diseases.

Dr. John J. McShane, Springfield, addressed the Morgan County Medical Society, September 14, on epidemic (lethargic) encephalitis, and Dr. Hubert S. Houston, Springfield, tuberculosis testing of children at the state fair.

News Notes

—Attention is called to the copy of the physical examination chart prepared by the Illinois State Medical Society for the use of members, printed on advertising pages 25-26. The page may be torn out for immediate use and additional copies may be secured from Dr. Harold M. Camp, Monmouth, or from the Educational Committee, 185 North Wabash Avenue, Chicago.

—Members of the Chicago Medical Society will be granted police protection on request when making calls on patients. Apprehension among members of the society since the murder of Dr. Bernard F. Garnitz last winter prompted Dr. Austin A. Hayden, president of the society, to request of the police commissioner an escort for any who feel it may be necessary, especially when called by persons unknown to them.

—Securities with a market value in excess of \$300,000 have been transferred to Northwestern University Medical School by an anonymous donor, to be used for the advancement and improvement of the teaching of urology. The trustees have the right to invest this money and allocate the income to the designated purpose whenever it is considered sufficient to inaugurate a productive program.

—The Chicago Medical Society gave a reception and dinner to officers of the American Medical Association and its constituent medical societies in the Trustees' Lounge, Hall of Science, Century of Progress, September 22. Dr. Dean Lewis, Baltimore. President of the

Association, spoke on "Medical Organization." and Dr. Eben J. Carey, director of the medical section, Century of Progress, gave an illustrated address on "A Century of Progress."

—An advisory board to aid the department of public welfare in the care of insane and feeble-minded inmates of the state hospitals was recently appointed by the governor. Members of the board include:

Dr. H. Douglas Singer, state alienist, and professor of psychiatry, University of Illinois College of Medicine.

Dr. Lewis J. Pollock, professor of neurology, Northwestern University Medical School.

Dr. Francis J. Gerty, associate clinical professor of psychiatry, Loyola University Medical School.

Dr. Ernest E. Irons, dean and clinical professor of medicine, Rush Medical College.

—Railroad officials request that physicians use only the official blanks required by the Interstate Commerce Commission when certifying to illness of persons who wish tickets extended. Many cases are brought to the attention of railroad officials of visitors to the Century of Progress Exposition who ask for extension of the time limits of their tickets or stopovers because of illness or quarantine. In most cases the physicians write a note, which cannot be accepted because the regulations of the commission require a special blank. Physicians are asked to advise their patients that railroads will furnish the official blank on application.

—The Society of Plastic and Reconstructive Surgery will hold its annual meeting, October 16-18, at the New York Academy of Medicine, 2 East 103 Street. The profession is invited to attend.

—The fiftieth anniversary of the first graduating class (1883) of the University of Illinois College of Medicine was celebrated with a banquet, recently, with 437 alumni present. Members of the first class who attended are Drs. Morris R. Weidner, Sr., Dolton; Halsey E. Lovejoy, Rocky Ford, Colo., and Elihu N. Elliot, Chicago. Dr. David J. Davis, dean of the college of medicine, presented each with a copy of the original picture of their class. Speakers included Drs. Davis, Vandy F. Masilko, president of the alumni association, and Mr. Bruce Balding, president of the fourth class. The history of the college, particularly

the first twenty-five years, was reviewed by Mr. William H. Browne, formerly secretary of the college. Dr. Weidner was installed as president of the Alumni Association for the coming year.

—The Institute of Traumatic Surgery presented a program, September 13, before the convention of the International Association of Industrial Accident Boards and Commissions as follows:

Dr. Nathan S. Davis III, Difference Between Backache Due to Trauma and That Due to Disease.

Dr. John D. Ellis, Routine Examination of the Injured Back.

Dr. Paul B. Magnuson, Congenital Anomalies and Arthritis as Contributing Causes in Injuries of the Spine.

Dr. Hollis E. Potter, The Wedge-Shaped Vertebra; Some Distinctions Between Healed Fractures and Healed Vertebral Disease.

Dr. Claud R. G. Forrester, Reduction of Disability by Fusion of Vertebrae After Back Injury.

Dr. Philip H. Kreuscher, Shortening the Period of Disability After Fractures of the Spine.

Dr. Leroy P. Kuhn, Final Disposition of Back Injury Cases.

—The medical faculty of Northwestern University announces the Third Annual Mayo Lecture on Surgery to be delivered on Friday, October 6, 1933, at 8 P.M. in Thorne Memorial Hall on McKinlock Campus of Northwestern University, Lake Shore Drive and Superior Street, Chicago. The lecture will be delivered by Dr. Alfred W. Adson, the subject being "The Surgical Consideration of Brain Tumors." The medical profession is cordially invited to attend this lecture.

—The governor recently appointed a commission of representatives of the Illinois State Department of Health to study the current outbreak of encephalitis in St. Louis. The four physicians are Drs. Hubert S. Houston, Springfield, Sandor Horwitz, Peoria, Henry Reis, Belleville, and William F. Grayson, Granite City.

—Dr. Charles F. Read, managing officer, Elgin State Hospital, will deliver a public lecture in the Illinois Host House, A Century of Progress, October 11, at 11 a. m., on "Mental Health in the Home." The lecture is spon-

sored by the woman's auxiliaries to the Illinois State Medical Society and the Chicago Medical Society. Luncheon at \$1.35 will be served in the Trustees Lounge. Reservations for luncheon should be made with Mrs. William R. Cubbins, 425 Arlington Place, Chicago, before October 8.

—Karl F. Meyer, Ph.D., director, George Williams Hooper Foundation, and professor of bacteriology, University of California Medical School, San Francisco, will deliver the 1933 Gehrmann lectures of the University of Illinois College of Medicine. The lectures will be given at the college, room 423, at 4 p. m. Dr. Meyer's subjects will be:

October 16, Undulant Fever, Bang's Disease and Malta Fever.

October 17, Equine Encephalomyelitis.

October 18, Psittacosis.

Deaths

PASCHALL NATHANIEL BOWMAN, Sterling, Ill.; Barnes Medical College, St. Louis, 1899; aged 65; died, July 22, of nephritis myocarditis and arteriosclerosis.

HELEN MARY BUCHANAN, Chicago; Chicago Homeopathic Medical College, 1882; aged 84; died, July 31, in the Chicago Memorial Hospital, of subphrenic abscess, cholelithiasis, cholecystitis and cholangitis.

HARRY RAYMOND CARSON, North Chicago, Ill.; University of Nebraska College of Medicine, Omaha, 1910; member of the American Psychiatric Association; served during the World War; medical officer in charge of the Veterans' Administration Hospital; aged 59; died, July 31, in the Veterans' Administration Hospital, Oteen, N. C., of tuberculosis.

PAUL CASPERS, Chicago; Bellevue Hospital Medical College, New York, 1893; a Fellow A.M.A.; on the staff of the Illinois Eye and Ear Infirmary for many years; aged 65; died, August 25, of pneumonia.

LAWRENCE R. CLARY, Pekin, Ill.; Chicago College of Medicine and Surgery, 1913; a Fellow, A.M.A.; formerly coroner and deputy coroner; health officer of Pekin; on the staff of the Pekin Public Hospital; aged 50; died, August 28, of heart disease.

WILLIAM F. DICKSON, Chicago; Faculty of Medicine of Trinity College, Toronto, Ont., Canada, 1882; a Fellow, A.M.A.; on the staff of the Woodlawn Hospital; aged 77; died, August 26, of heart disease.

CHARLES SUMNER GREGORY, Findlay, Ill.; Keokuk (Iowa) Medical College, 1896; member of the Illinois State Medical Society; aged 58; died, August 12, of heart disease.

JOHN CHARLES GUNN, Belleville, Ill.; Washington University School of Medicine, St. Louis, 1900; a Fellow, A.M.A.; served during the World War; on the staff of St. Vincent's Hospital, and Home for the Aged; aged 57; died suddenly, September 4, of heart disease.

ALFRED MARVIN HALL, Chicago; Chicago Medical College, 1889; associate professor (extramural) of ophthalmology, Northwestern University Medical School; on the staff of the Passavant Hospital, and formerly on the staff of the Children's Memorial Hospital; aged 71; died suddenly, August 27, in Nelma, Wis., of coronary thrombosis.

MARTIN WARNER HANSON, Havana, Ill.; Jenner Medical College, Chicago, 1908; a Fellow, A.M.A.; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1909; served during the World War; aged 54; died, July 30, in St. Francis Hospital, Peoria, of septicemia and cellulitis of the face.

HENRY F. JONES, Flat Rock, Ill.; University of Kentucky School of Medicine, Louisville, 1885; member of the Illinois State Medical Society; aged 79; died, August 6, of cirrhosis of the liver.

BASIL GEORGE LAMBRAKIS, Chicago; National University of Athens School of Medicine, Greece, 1922; member of the Illinois State Medical Society; instructor in the department of laryngology, rhinology and otology, University of Illinois College of Medicine; on the staff of the Columbus Hospital; aged 35; died, September 1, of injuries received in an automobile accident.

LUCIUS CROCKER PARDEE, Evanston, Ill.; Northwestern University Medical School, Chicago, 1894; a Fellow, A.M.A.; formerly instructor and associate professor of dermatology at his alma mater; on the staff of the Evanston (Ill.) Hospital and formerly on the staff of the Wesley Memorial Hospital, Chicago; aged 64; died, August 27, of angina pectoris and pulmonary edema.

CHARLES PFEIFFER, Chicago; Rush Medical College, Chicago, 1900; aged 59; died, August 27.

JOSEPH LUTHER REMSBURG, Lamoille, Ill.; State University of Iowa College of Medicine, Iowa City, 1878; aged 85; died, July 29, in the Harris Hospital, Mendota.

ROBERT EMMETT ROBINSON, Morrison, Ill.; University of Michigan Medical School, Ann Arbor, 1870; aged 85; died, August 12, of heart disease.

LAWRENCE RYAN, Chicago; Rush Medical College, Chicago, 1894; a Fellow, A.M.A.; formerly assistant professor of surgery at his alma mater, professor of surgery and head of the department, Chicago College of Medicine and Surgery and clinical professor of surgery and dean, Loyola University School of Medicine; fellow of the American College of Surgeons; aged 70; for many years on the staff of the Hospital of St. Anthony de Padua, where he died, August 29, of lobar pneumonia.

EDMOND FRANCIS SHANAHAN, Hebron, Ill.; Creighton University School of Medicine, Omaha, Neb., 1910; member of the Illinois State Medical Society; aged 48; died, August 24, in a hospital at Elgin, of carcinoma.

RODNEY ADREN WRIGHT, De Kalb, Ill.; Hahnemann Medical College and Hospital, Chicago, 1913, on the staff of St. Mary's Hospital; aged 47; died, August 24, in Prescott, Ariz.

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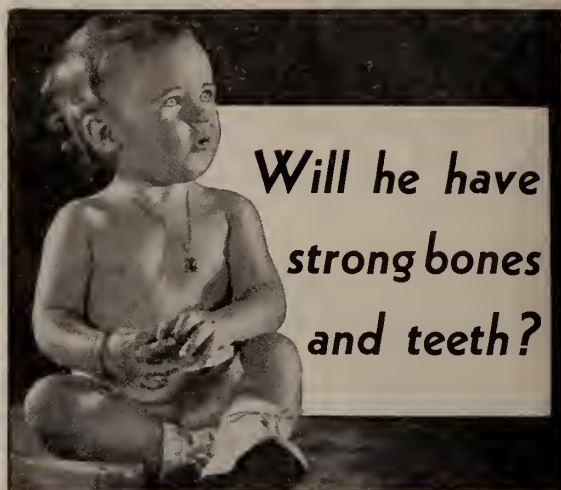
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ILLINOIS PERIODIC PHYSICAL EXAMINATION RECORD*

Case No.

Name Age Height Weight usual.....
 present.....
 normal.....

Temp. (3 min.).....Pulse Rate { Seated (before exercise)
 { Standing (before exercise)
 { 60 sec. after exercise (sufficient to increase pulse to 110).....

Bl. Pres.: Sitting { Sys. Lying { Sys.
 { Dias. { Dias.

Hearing { R. Vision { R.
 { L. { L.

Urine: Color Reaction.....Sp. Gr. Alb. Sugar.....
 Microscopic.....

1. (Standing)

- (1) Posture: erect stooped..... Lateral curvature.....
- (2) Superficial glands..... cervical.....axillary..... inguinal..... epitrochlear.....
- (3) Abdomen: flat Pendulus
- (4) Arms defects
- (5) Legs big veins..... scars
- (6) Feet: flat painful deformed
- (7) Skin Hands
- (8) Nutrition Hernial rings
- (9) Chest: expir. inspir. Romberg

2. (Sitting)

- (1) Scalp Patellar reflexes
- (2) Eye reflexes to light to distance
- (3) Nose: conformation..... air passages free..... obstructed..... discharge.....
- (4) Teeth: caries devitalized..... crowned
- (5) Gums: healthy..... retracted..... inflamed
- (6) Tongue: clean..... coated..... moist..... dry.....
- (7) Pharynx: ulcers..... scars tonsils
- (8) Ears: conformation discharge
- (9) Heart: locate apex (measure from mid-line--state interspaces)..... character of sounds.....
- (10) Lungs: abnormal findings

3. (Lying)

- (1) Abdomen: palpation tender..... tumors
- (2) Liver: percussion tender..... palpable
- (3) Spleen: percussion tender..... palpable
- (4) Kidneys: palpable tender.....
- (5) Rectum: inspection digital findings
- (6) Male Genitalia
- (7) Female Genitalia and pelvis

4. Summary: defects of function and structure and errors of habit

5. Advice given to the patient

*Prepared by the Illinois State Medical Society.

Copies of this physical examination record may be secured from Doctor Harold M. Camp at Monmouth, Illinois, or the Educational Committee, Illinois State Medical Society, 185 North Wabash Avenue, Chicago.

HISTORY

(This side to be filled in by the person to be examined)

1. Name Country of birth Date of birth.....
2. Address Race
3. Single, married, widowed, divorced.....
4. Occupation
5. How often have you changed your work?..... Why?
6. Is your work dangerous or unhealthy?.....
7. Is it indoors or out?.....
8. Is it light where you work?..... Dark?..... Dusty?..... Smelly?..... Noisy?..... Crowded?.....
9. At work are you usually seated, standing, or walking?
10. How many hours a day do you work?..... How many days a week?.....
11. Have you a room and bed to yourself?..... With window open?.....
12. What are your hours of sleep?..... Is your sleep restful?..... By what is it disturbed?
13. Where do you eat your meals?.....
14. How much time do you take for each meal?.....
15. Of what foods are you especially fond?.....
16. How much do you drink daily of:
 Water Tea Soft drinks
- Milk Coffee Alcoholic drinks
17. Do you eat candy?.....
18. Do you have a bowel movement daily without the use of drugs?..... What laxative do you use?..... How often?..... Do you have pain or bleeding with bowel movement?..... How often?.....
19. Have your menstrual periods been regular?.....
20. Have they interfered with your usual occupations?.....
21. Have pregnancies and confinements been free from accidents?
22. How often do you bathe?.....
23. What regular exercises do you take in addition to your work?
24. Do you share in church, social, political, club, or trade associations?
25. What are your pleasures or recreations?.....
26. Have you had any of the following diseases and at what ages?
 Tuberculosis..... Scarlet fever..... Tonsilitis
- Malaria..... Diphtheria..... Frequent colds.....
- Rheumatism..... Typhoid fever..... Syphilis or gonorrhea.....
27. Do you have dyspepsia?
28. Do you have headaches?
29. Are you short of breath on going up stairs?.....
30. Do you catch cold easily and often?.....
31. Are you subject to sore throats?.....
32. Have you been vaccinated against smallpox, typhoid fever, diphtheria?..... When?.....
33. Have you had any accidents, broken bones or surgical operations?
34. How often do you consult you dentist?.....
35. Are you as well at present as formerly?..... If not, why?
36. Do you remember any important diseases of your parents or family which may have affected your own health?

Remarks:

.....

.....

.....

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TEMPERATURE (Mean monthly 40-year average)	49.7	52.2	57.5	54.3	71.4	82.7	89.7	79.3	68.1	57.5	49.8		11.37
RAINFALL (In Inches— 40-year average)	8	96	81	32	14	23	2.4	2.6	1.0	6	76	1.09	
HUMIDITY Monthly	61	55.6	44.8	40.4	28.4	29.2	54.2	57.3	47.1	46.8	57.1	74.2	49.5
Humidity (40-year average)	25.3	27.7	22.4	22.6	15.9	17.7	36.7	35.7	29.0	26.5	41.1	48.1	29.9

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Book Reviews

MAYO FOUNDATION LECTURES ON THE HISTORY OF MEDICINES: A series of Lectures at the Mayo Foundation and at the Universities of Minnesota, Wisconsin, Iowa, Northwestern, and the Des Moines Academy of Medicine. Given between 1926 and 1932. Octavo of 516 pages with 26 illustrations. Philadelphia and London: W. B. Saunders Company, 1933. Cloth, \$5.00 net.

This work represents a series of lectures of the Mayo Foundation and the Universities of Minnesota, Wisconsin, Iowa, Northwestern, and the Des Moines Academy of Medicine.

A TEXT-BOOK OF PHYSIOLOGY: BY WILLIAM H. HOWELL, Ph.D., M.D., Sc.D., LL.D., Emeritus Professor of Physiology in The Johns Hopkins University, Baltimore, Maryland. Twelfth Edition, Thoroughly Revised. 1132 pages with 308 illustrations. Philadelphia and London: W. B. Saunders Company, 1933. Cloth, \$7.00 net.

This twelfth edition brings the subject of Physiology up-to-date. The author in this work has incorporated in the text the essential advances in all fields of physiology in a form suitable to the beginning student. The work should be in every physician's library.

THE DISEASES OF INFANTS AND CHILDREN: BY J. P. CROZER GRIFFITH, M.D., Ph.D., Emeritus Professor of Pediatrics in the University of Pennsylvania; Consulting Physician to the Children's Hospital, and St. Christopher's Hospital for Children; Consulting Pediatricist to the Woman's, the Jewish and the Misericordia Hospitals, Philadelphia, and A. Graeme Mitchell, M.D., B. K. Rachford, Professor of Pediatrics, College of Medicine, University of Cincinnati; Medical Director and Chief of the Staff of the Children's Hospital Research Foundation; Director of Pediatric and Contagious Services, Cincinnati General Hospital. 1155 pages with 281 illustrations. Philadelphia and London: W. B. Saunders Company, 1933. Cloth, \$10.00 net.

In this edition no change has been made in the construction of the book. It has merely been brought up-to-date.

HOW TO STAY YOUNG. BY ROBERT HUGH ROSE, M.D. New York & London. Funk & Wagnalls Company. 1933. Price \$1.50.

In this work the reader will find in the recommendations the most effective and least expensive way of handling health problems and assuring long life. The author, a physician of authority and long experience in diet and weight control as well as in general medical practice, presents a medically sound plan of the utmost simplicity.

INTERNATIONAL CLINICS. EDITED BY LOUIS HAMMAN, M.D. Volume 3—Forty-Third series. Philadelphia, Montreal, London. J. B. Lippincott Company, 1933.

This work represents illustrated clinical lectures and especially prepared articles on all the specialties by leading members of the medical profession throughout the world.

THE JOY OF LIVING. AN AUTOBIOGRAPHY DR. FRANKLIN H. MARTIN. TWO FOREWORDS: WILLIAM J. MAYO, M.D. GEORGE W. CRILE, M.D. With Illustrations. New York Doubleday, Doran & Company, Inc. 1933. Price \$7.00.

Volume I is devoted to personal and professional reminiscences. Volume 2, to the World War. The work is profusely illustrated and artistically bound in red cloth and gold lettering. It is the story of a country boy of humble circumstances, who by dint of hard manual labor, practical idealism and tenacity of purpose worked his way to a position of world prominence as surgeon, writer, soldier, organizer and administrator; and who, in that upward climb, lost none of his youthful enthusiasm and keen enjoyment of simple things.

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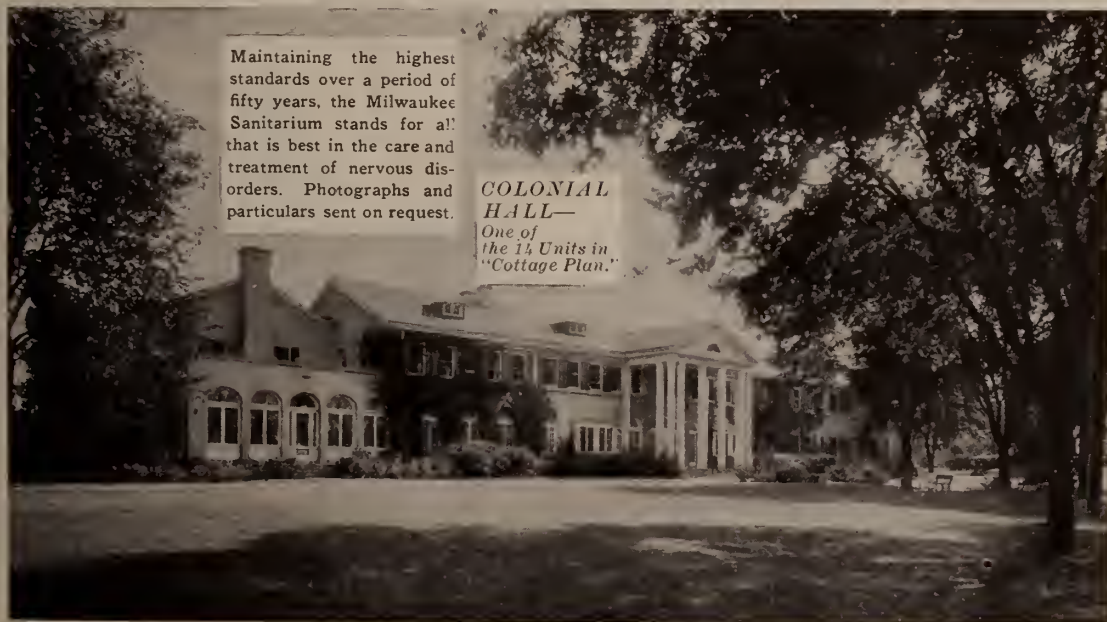
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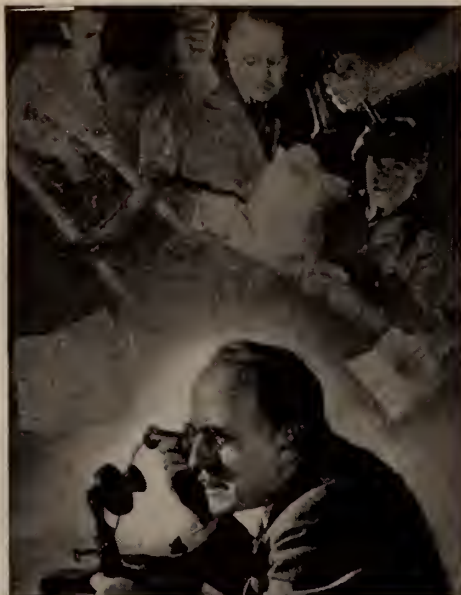
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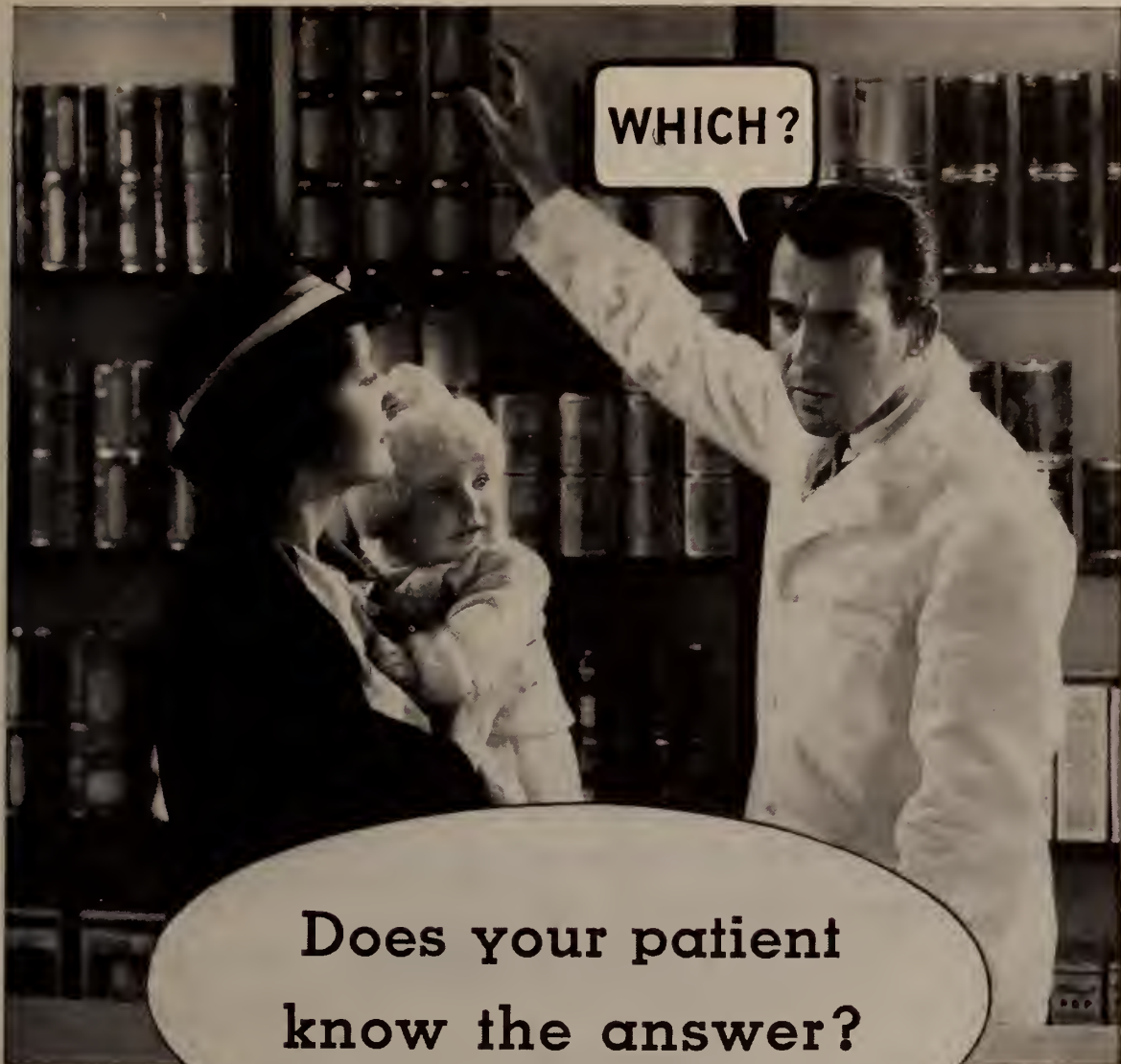
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***Chemical Research**

Volwiler & Tabern, A. C. S. Report, Sept., 1929.
Volwiler & Tabern, J. A. C. S., April, 1930.

***Commercial Production**

Abbott Laboratories were first to commercially produce this product—October, 1930.

***Clinical Use**

***Pharmacologic Studies**
Volwiler & Tabern, J. A. C. S., April, 1930.
Fitch, Waters & Tatum, Am. J. Surg., July, 1930.
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Magill, Lancet, March, 1931.
Rowbottom, Lancet, Feb., 1931.
Riddell, Lancet, Feb., 1931.
Shipway, Lancet, Feb., 1931.

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Cases Treated	156	238	206	555	1,155	
Complete Relief of Symptoms	143	175	151	348	817	70.7%
Partial Relief of Symptoms	6	43	23	114	186	16.1%
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* (1) Atkinson, A. J.—*Journal American Medical Association*, Volume 98, page 1153, April, 1932.

* (2) Brown, C. F. G.; Cromer, S. P.; Jenkinson, E. L.; Gilbert, N. C.—*Journal American Medical Association*, Volume 99, page 98, July, 1932.

* (3) Fogelson, S. J.—*Illinois Medical Journal*, December, 1932.

* (4) Submitted for publication. (Totals of patients brought to date.)



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VOL. LXIV

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No. 5

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Doctor, read carefully and learn what you receive from membership in the Illinois State Medical Society.

Money spent in dues for a state or local medical society is one of the safest, surest investments a physician can make.

For the nominal dues of approximately \$10.00 a man gets a medico-legal protection and his fellowship in the society of his confreres as well as eligibility to membership in the American Medical Association.

The dues vary in the respective counties, from \$7.00 down state to \$15.00 in Cook County per year depending upon the local activities of the county society in which you reside. Illustrative of the benefits secured from such affiliation rate the following:

1. For approximately \$10.00 per year you get medico-legal protection; membership in your County and Illinois State Medical Societies and the ILLINOIS MEDICAL JOURNAL. Membership in the above makes you eligible also to fellowship in the American Medical Association. Affiliation and Association with this large representative body of men is of great value and importance to every physician.

2. Medical Defense. Out of your annual dues paid, the trustees of the State Medical Society are required to turn \$1.50 over to the "medical defense committee" for the protection and defense of members of the society against whom suits for malpractice or damages may be brought. For years the Illinois State Medical Society has been meeting all expenses of such litigation—that is, court costs, attorney's fees, costs of appeals, witness fees, the cost of record—no limitation being placed on this sort of expense of an individual case.

This means that if you become a member of the Illinois State Medical Society you will be defended in every effective manner possible against suits for damages for alleged malpractice, as well as attempted blackmail. This one feature alone is worth many times the cost of membership. Private defense companies are charging \$20.00 to \$75.00 per year and upwards for the defense and indemnity.

Medical Legislation. Also \$1.00 is set aside for a fund to be used by the Public Relations Committee for the purpose of combating vicious legislation.

Members of the Illinois State Medical Society are also eligible to membership in any or all of the various affiliated special medical societies in Illinois.

3. Membership in the Illinois State Medical Society. All members of any county Medical Society are ipso facto members of the Illinois State Medical Society and will receive all publications of the State Society without any additional fees, dues or subscriptions.

Memberships in the state and local society are necessary before you can affiliate with the reputable professional societies of the country and the American Medical Association. In some states a year's membership in the local society is required before they can secure a license by examination or reciprocity.

4. The Journal of the Illinois State Medical Society. This Journal, owned and published monthly by the medical profession of Illinois, is sent free to each member. The official organ of the Illinois State Medical Society, one of the largest and most influential state organizations in the country, it is among the most comprehensive state medical journals both in point of circulation and editorial scope. It ranks highly, both in size and in influence with all medical journals. *Further, in the fight against economic evils oppressing the medical profession, the ILLINOIS MEDICAL JOURNAL has been not only a leader, but ever a pioneer.* In the Journal is printed the proceedings of the Illinois State Medical Society; the papers presented at the Tri-State District Medical Society (Illinois, Iowa, Wisconsin, and Minnesota) and the Chicago Medical Society, which is the largest local medical society in the world. The Chicago Medical Society meets every week, and it has fifteen branches, proceedings of which also are printed

in the ILLINOIS MEDICAL JOURNAL, as well as of eleven affiliated societies, namely; Gynecological, Pathological, Ophthalmological, Surgical, Urological Laryngological and Otological; Orthopedic, Pediatric, Neurological, Roentgen Ray, Medical Legal. On the programs of these various societies appear from time to time a great many of the most eminent men of America and Europe. In the Journal also is published the papers read and the reports of all meetings of the respective county society meetings throughout the state, as well as all the news of interest to medical men in Illinois and throughout the United States. The price of the Journal for non-members is \$3.00 per year. It is sent to all members of the Illinois State Medical Society, as one of the perquisites of membership.

5. Reformation of Medical Conditions. Many reforms are being carried on which in previous years were impossible. A few years ago the Medical Legislation Committee of the Illinois State Medical Society succeeded in having passed by the Illinois State Legislature what is considered the best medical practice act in the United States. This Society has a representative as chairman of this committee in Springfield, and the committee is working to the good advantage of medicine in this State. The committee is receiving financial support from the State Medical Society as necessity requires. Every year different cults and branches of so-called medicine try to have special laws passed which will license them through examinations which do not conform to the medical practice act. It is only through large membership, financial and moral support that this type of legislation can be controlled.

Abuse of medical charities, illegitimate and unethical methods of practice, and all the other evils which have embarrassed the physician and reduced his income can only be successfully handled by a well organized and compact profession, able to take a positive stand on these matters and to carry out its decisions. There is in view (under thorough organization), relief from many of our present difficulties. There never will be devised a patent mechanism which will relieve the doctor of participations in our political activities. Physicians must govern themselves or they will be misgoverned.

6 Eligibility to Fellowship in the American Medical Association. The only way in which a physician can become a member of the State or

National organization is through the local society of the County in which he lives. The advantages and privileges to be gained through membership in this great association need not be enlarged upon. Fellowship in the American Medical Association includes The Journal of the American Medical Association, the greatest weekly medical journal published in the United States.

7. Regulations of Pharmaceutical Preparations. The American Medical Association has established a committee, known as the Council on Pharmacy and Chemistry, for the purpose of examining, analyzing and reporting from time to time, to the profession its findings on the most important proprietary preparations, such as the general practitioner is constantly being importuned to buy and prescribe for his patients. This movement, which is of vital importance to every practicing physician, deserves the support of all members of the profession, regardless of society affiliations. By becoming a member of your local society you will come more closely in touch with organized and systematic efforts for the uplift and benefit of the profession at large.

8. The Completion of Medical Organization in Illinois. The Illinois State Medical Society, today, comprises three-fourths of the reputable members in the State. It is to the interest of every physician in Illinois to complete and strengthen this organized and concerted movement on the part of the profession for the betterment of local conditions. The suppression of quackery, the prevention of enactment of vicious legislation, and the consummation of other needed reforms can only be accomplished by complete and thorough organization and unanimity on the part of the profession of the State. In this work the support and cooperation of every reputable physician is requested.

The welfare of your profession depends upon the support you give it. A well organized profession means greater respect and better compensation.

The Illinois State Medical Society desires your support and cooperation. Go to the next meeting of your local or county society and meet the other physicians of your neighborhood. Ask one of the officers of the society for an application blank, fill out the blank, either send or better hand it to the President or Secretary together with the fee for membership in your county

society and thus secure membership in the organized profession of the state and participate in the benefits and privileges of medical organization.

Qualifications for Membership—Every registered physician residing in any county, who is of good moral and professional standing and who does not claim to practice any exclusive system of medicine, shall be eligible for membership.

YOUR STATE AND COUNTY MEDICAL SOCIETY GIVE UNAPPROACHABLE ECONOMIC SERVICE

Organized medicine, as vested in your county and state society provides the staunchest of economic and professional protection.

This unapproachable economic and legislative service to the thousands of physicians in Illinois is so conspicuous and far-reaching and so apparent that the well versed physician wonders what in the world justification there is on the part of certain physicians to claim that no economic service is offered or given by organized medicine in Illinois or elsewhere.

In the face of such false and misleading statements it is well to epitomize briefly some of the unconscious benefits that have accrued to the profession from the various officers and specific committees of the respective county medical societies and the Illinois State Medical Society and that have, so to speak, continued "to toil upwards in the night."

Organized medicine, as vested in your county and state society, provides the staunchest of economic and professional protection.

This is done at a minimum price. Organized medicine gives the members of its accredited societies, the maximum of efficient service at a cost that is almost picayunish. This is quite in line with the ratio of skill and science versus financial return with which the profession serves the public. And all of this is in juxtaposition with what the various cults and isms levy upon the members of their numerous organizations. For instance chiropractors in Illinois pay annual dues of \$120 per capita, merely as a starter, for the upkeep of their organization. Further, special assessments up to the sum of \$500 are frequently the order of the day.

As a result of foresight and hard work, the organized profession of the state prevented the

enactment of the notorious Sheppard - Towner Bill, ten years ago, in so far as the State of Illinois is concerned. At its recurrence for consideration ten years ago, this bill was again repelled as it never reached a vote. Again eight years ago, so influential had the organized profession become that its sponsors held that "discretion was the better part of valor" and after due deliberation, did not re-introduce their bill.

There were only five states with sufficient foresight to turn down this nefarious legislation. Illinois can take pride in being one of the five. The five states are Connecticut, Illinois, Kansas, Maine and Massachusetts. Again ten years ago, in the Illinois General Assembly, nearly fifty bills of a detrimental medical nature were introduced. Not one was written on the Statute books. Again three years ago, as well as this year, in the Illinois General Assembly, over one hundred bills of a detrimental medical nature were introduced. Not one was written on the Statute books.

No other state in the Union can show such a record. It stands for *pre-eminent organization service to membership*.

For twenty years the organized profession of the state has kept watch and ward over the interests of the profession. From the perfection of the Medical Practice Act in 1923 to the present day, continuous service has been given the physicians of the state of Illinois by their state and county organizations. During the past twenty years the fight has included the overflow of some almost incredibly favorable laws for quacks and charlatans. No other state has been so successful in such prevention of vicious medical legislation. Illinois comes nearer than any other state in the Union of possessing one standard for entrance into the practice of medicine. Illinois is not afflicted with special boards, conditions and the like, by which the inept traffic in human life, nor are its ethical doctors humiliated by having to sit on the same boards with quacks and representatives of vicious cults.

Referring again to the Medical Practice Act in Illinois, it is one of the most capable pieces of legislation of that nature that is in existence. Furthermore, the Supreme Court has upheld its validity, not once but *on four separate occasions*. This piece of legislation owes its place on the Statute books to the organized medical profes-

sion of Illinois. It is a masterpiece and it is the work of organized medicine in the state.

Advisability of a blanket act administered by one board including all branches of human treatment, is self-evident in view of the multiplicity of laws and examining boards in many states. When the proposed measure was pending, endless effort was made by drugless healers to liberalize the act. Through the untiring efforts of officers of the various medical societies of the state, the bill passed in essentially the same form as that in which it was offered.

Many members of the General Assembly are in the real estate business. According to law these must pay a renewal license fee annually. This group sought attachment of a \$5.00 renewal fee on the Medical Practice Act. Vigorous opposition by organized medicine, hours of conference with the leaders in that session of the General Assembly enabled doctors to defeat the amendment, and save a great deal of money and needless red tape for the physicians. With about twelve thousand medical men in Illinois, defeat of this amendment approximates a saving of \$60,000 annually to these physicians, or practically half million dollars since the passage of the act in 1923.

In 1923 the Sheppard-Towner Bill was championed by a large lobby of women of education who waged an intensive campaign for the adoption of the provisions of the Federal Act by the State of Illinois. During the hearing on that bill in Congress in 1921 Illinois was the only state that sent a physician to Washington to oppose the passage of the Federal Maternity law. Despite the able protest of Dr. Charles E. Humiston, then president of the Illinois State Medical Society who represented us, unfortunately the bill was passed. Every state in the union accepted the act except five; viz, Illinois, Maine, Massachusetts, Kansas and Connecticut. The protest made by Illinois at that time later bore results against federal subsidies of this sort. The Illinois State Medical Society has aided in defeating several hundred pernicious bills in the last four Illinois General Assemblies. Out of the twelve hundred bills introduced at the 1927 session, one hundred twenty-six, or over ten per cent., had either a direct or an indirect bearing on the medical men of our state. In 1925, after a bill curtailing public health departments in the necessary performance of their

work had been literally "kissed" through the House and Senate and the governor urged to sign the measure by the League of Medical Freedom call went out to representatives of the Illinois State Medical Society. After a conference with, and upon the advice of this committee, the governor vetoed the bill.

Diversion of the tremendous post-bellum lay interest in the practice of medicine with an insistence for participation therein that has verged dangerously towards state medicine and the practice of the profession by lay-persons, has been a problem of organized medicine, with the life saving idea of turning such interest from a force pernicious to the public welfare into an active auxiliary of the recognized medical profession. The medium for dealing with this vital problem has been sought for and found in the educational committee of organized medicine. Through this committee, organized lay-bodies, especially of women, either club women, or those who had felt the urge of concerted benevolence as vested in war auxiliary work are being shown that the best contribution they can make for public health and infant welfare is to work through organized medicine rather than through organized laymen. This problem, including as it does the tremendous amount of free service given through the endowed clinics of private foundations, touches upon the similar debauching of the province of ethical medicine through the federalization of over sixty per cent. of the hospitals of the country. Government ownership of so large a percentage of hospitalization facilities of the country is of a piece with the noose that has been slipped over the heads of the taxpayers and the profession by such legislation as the Sheppard-Towner bill, and all of which has been and is being fought by organized medicine. Especial study, careful appraisal and gradual solution, of all these problems and their ramifications reveal a seemingly insurmountable task for the medical profession of the nation. Combating these terrific problems with their tremendous financial backing, has been a vital labor, and continues to occupy the time and keenest mental concentration of the officers of ethical medical organizations of the State of Illinois. An enormous amount of time and an inestimable amount of personal and financial sacrifice on the part of these officers has gone into the solution of these problems, as far as they have been

solved and into the protection of the rights of ethical physicians, and even further for those of the people of the state themselves. A final word may not be malapropos about what in future may prove to be the weakest link in the chain and one to which the education committee has bent much attention. The place played by organizations of women in the furtherance of state medicine is serious. Many of the women who said that they thought the Sheppard-Towner law was a beneficial thing simply did not know what they were talking about, so it was discovered, as their emotions only had been appealed to, and investigation showed that the average club woman who spoke blithely about the excellencies of the Sheppard-Towner bill thought that it means financial maternity care for the poor.

The education committee sponsored by the Illinois State Medical Society has paid especial attention to the education of club women and other associations of women along the lines of what organized medicine is doing. As a result, today there is a far better understanding between these bodies and the organized profession and a spirit of cooperation on the part of these lay-bodies to the end that the problem of organized medicine is to receive and adopt their assistance, but not to suffer their dictation.

Where formerly organized medicine met with misunderstanding opposition, now organized medicine is receiving support and a large amount of cooperation from the Illinois Federation of Women's Club, the Parent-Teacher Association, and numerous similar and affiliated organizations. All of this has been accomplished through untiring endeavor from the diligent, conscientious, far-seeing, self-sacrificing executives who have served as officers for many years of the state society and its components.

VOLUNTARY HOSPITALS SHOULD NOT BE ALLOWED TO PASS OUT OF EXISTENCE. THEIR FINANCIAL SITUATION HAS BECOME AN ECONOMIC CRISIS

Refinancing of voluntary hospitals is an item of salient import in the general reconstruction now taking effect. The high class voluntary hospital is one section of auxiliary medicine where the menacing specter of state control can be hobbled at least. These institutions should not be allowed to pass out of existence. Their

economic situation has become an economic crisis. Nor is this a temporary difficulty. It is far more than a matter of reduced endowments, ill-fated investments, slashed budgets, reduced operating expense and depreciated patient income. As a matter of fact our entire magnificent private hospital structure, unequalled in the world or in time, has been a house built upon the sand. Salvation depends upon a good jacking up of the system and a solid, brand new rock foundation.

Great Britain has pulled herself well out of her economic muss. The life line thrown out to voluntary hospitals in Great Britain is worth examination. Before literal adoption here its merits should be well examined by both the medical profession and the laity. A hasty commitment is ever unfortunate. But the plan is meritorious.

In the *New York Times* we are told by E. H. Lewinski Corwin that:

"The experience of Great Britain in this particular regard is worthy of close study. The hospital situation in that country became acute a decade or so ago. The burdens of taxation, the disorganized trade following the World War, and the growing difficulties of providing employment impoverished the British population, and the maintenance of social insurance placed enormous responsibilities on the government exchequer. The wealthy families became less able to meet the growing demands on the part of various charitable endeavors, and the situation of the voluntary hospitals in Great Britain in the beginning of the last decade became so desperate that a special committee was appointed by the government early in 1921 to inquire into the situation. This special committee was presided over by the Viscount Cave.

"The government committee reported under date of May 21, 1921. To the fundamental question as to whether the voluntary hospitals should be encouraged to continue, or whether it would not be more desirable that they should be turned over to the State and be henceforth maintained by taxation, the unanimous answer of the committee was to the effect that 'the money loss to the State would be a small matter compared with the injury which would be done to the welfare of the sick for whom the hospitals are provided, the training of the medical profession and the progress of medical research,'

if the voluntary hospital should be allowed to pass.

"The committee recommended that a Parliamentary grant of £1,000,000 be made, and that the money be distributed under the direction of a specially appointed voluntary Hospitals Commission. Such a commission was appointed under the chairmanship of Lord Onslow, but the grant voted by Parliament was reduced to £500,000. The Hospitals Commission rendered its final report in 1928.

"The commission, like its predecessor, the government committee, laid stress on the need of broadening the basis of support of the hospitals through so-called contributory schemes.

"In the words of the government committee report, 'if the voluntary hospital is to continue to prosper, it must rely not only on the large subscription and gifts, but also, and to an increasing extent, on moderate and continuous contributions from all classes of the community.' But it was insisted that there must be a direct quid pro quo for these contributions.

"*It may seem strange that, in a country where compulsory insurance against the contingency of illness exists there should be need for further arrangements to provide for hospitalization.* In Great Britain the treatment provided for by law in case of illness is of a kind which can be properly undertaken by a general practitioner 'of ordinary professional competence and skill'. The health insurance act does not provide for treatment requiring the facilities of a hospital. The government committee did not express a definite opinion as to the desirability of broadening the scope of the act to provide payment for hospital care.

"There were already in existence several schemes of contributory collections, outside of individual hospitals—those of Oxford, Sussex and the several Hospital Saturday and Sunday Funds. In London the collections were made by several agencies, of which the Hospital Savings Association became most important.

"There are at present at least 270 hospital contributory schemes in Great Britain, differing from one another in details of practice and privileges accorded to their contributors. They have an enrolled membership of about 6,000,000, not including dependents of contributors. They contribute annually into the treasury of the voluntary hospitals £2,500,000, or from 60 per

cent. to 70 per cent. of the entire income of the hospitals.

"A brief description of the plan evolved by the Merseyside Hospitals Council of Liverpool may suffice to bring out the essential features of the contributory hospital schemes.

"In the Liverpool area there are twenty-two voluntary hospitals and all of them have agreed to pool their resources as a unit and to abstain from making individual appeals to the community for support. The city authorities, the public assistance officers, organized labor, the medical profession, the churches and the university have allied themselves with the hospitals in conducting annually a financial campaign for the maintenance of hospitals.

"The industrial workers have consented to make weekly contributions toward the support of hospitals and toward their own protection in case of illness requiring hospitalization. The employers of labor have agreed to deduct the voluntary contributions of their workmen and to turn them over to the central fund under the Merseyside Hospitals Council, plus their own contributions, the size of which varies. The employers, as well as workmen, are represented on the central council as on its various committees. In other words, the Merseyside Hospitals Council serves both as a community chest for the hospitals and as a quasi hospital insurance fund.

"The plan, as it has been worked out there, is only a few years old and is admittedly an experiment. The penny in the pound contribution was initiated simply because of its slogan value and the ease with which contributions could be calculated. It does not take into consideration the size of the family of the contributor. It bases the contribution in proportion to earnings of the individual rather than in proportion to the risk involved.

"In return for his weekly contribution, the fund guarantees to the contributor and his dependents the payment of hospital treatment, if and when needed, as well as auxiliary services, such as ambulance service, surgical appliances, extra nourishment, convalescent care, spa treatment and so on. Although the council has practically succeeded in balancing the hospital budgets, it recognizes that the penny in a pound contribution is inadequate to meet the cost of hospitalization. For the time being the council has decided to keep the penny in the pound basis in-

tact, but it is asking every one to give a penny for each pound and a part of a pound, the employer to add one-third of the collection in his organization.

"Thus every one in the scheme will pay a penny if he earns a pound or less; he will pay two pence if he earns two pounds or less; and three pence if he earns three pounds or less and so on. With this change in the contributory scheme, the average contribution will range from $3\frac{1}{4}$ to $3\frac{1}{2}$ pence a week, and this contribution is expected to meet the existing hospital deficits and to pay for all the auxiliary services.

"Under an act of Parliament of 1929, the former poor law hospitals have been taken over by the municipalities and are providing for certain types of infectious and chronic maladies and for acutely ill patients who are destitute. A contributor to the Merseyside fund, sent by a physician to a municipal hospital, is, by virtue of the arrangement made, free from financial investigation. Under this plan the wife of the contributor and his bona fide dependents, that is, those who are resident with him and wholly dependent upon his earnings, are entitled to full hospital benefits.

"The Merseyside contributory plan admits also clerical employees, provided their incomes do not exceed the limits agreed upon in concert with the medical profession as insufficient to obtain adequate service in any other way. Persons whose incomes exceed the minimum are not precluded from sharing in the contribution of a penny in a pound, and they may obtain admission to a voluntary hospital on the recommendation of their family doctors, but they are not entitled to free medical service while in the hospital.

"The point may be raised whether the pattern of organization and function of the British contributory schemes is applicable in this country. In many of our large cities, and in some counties, we have hospitals maintained by tax funds, which offer free service to those unable to pay for hospital and medical care. Those who use these services need not be certified by the authorities as paupers. There is, therefore, less urge here on the part of wage earners to provide for the contingency of illness on an insurance basis. In this country of 'rugged individualism' there is more paternalism in many avenues of life, particularly in provision for the sick, than

in any European country outside of Soviet Russia.

"For American purposes the plan would have to provide for the higher levels of our industrial population, as well as for clerks and salaried employes, small shopkeepers and the like. This may lead to the inclusion in the plan of facilities of a semi-private character, which would raise problems of organization entirely outside of the scope of British experience and which, in a large American city, would require for their solution an extent of cooperation which hitherto has not existed among the hospitals.

"Another difficulty which would have to be overcome before any such plan could be put into operation here is that of the relationship of the insured to the physicians inside and outside of the hospitals. These problems are not only of a financial nature; they relate to proper professional service and the hospital affiliations of physicians and surgeons. Whatever form the group insurance plan for hospital care may take in this country, if it be adopted at all, it will not be in the nature of a sickness insurance as understood abroad. It will be merely a voluntary distribution of the burden of cost of hospital care throughout the community for the benefit of the participants as well as for the hospitals.

"The experience of several American hospitals which have independently organized group insurance plans is rather encouraging from an actuarial point of view. Baylor University Hospital has demonstrated that a group insurance plan could be worked out. Two other hospitals in Texas are meeting the financial problem for themselves and their patients in this way, and the Hahnemann Hospital in Philadelphia is experimenting with a plan of similar character. An association was formed in Brattleboro, Vt., to provide a similar opportunity for the people of that city, and recently the hospital in Cooperstown, N. Y., serving a rural section, organized a method of providing medical and hospital care in the community on a rather comprehensive scale. The Cooperstown experiment, however, is more in the nature of a sickness insurance and may find application in only a limited way in rural sections.

"There is a movement on foot in several communities to afford opportunity to provide against the contingency of hospital care on an insurance

basis. In Essex County, N. J., the hospital council has voted in favor of proceeding with such a plan. This undertaking undoubtedly will be wanted closely by other communities."

DR. J. E. CAMP, 75, DIES; PRACTICED FOR 53 YEARS

Dr. Julian E. Camp, son of Lorin Wallace and Emma Elizabeth Camp, was born at Montrose, Pennsylvania, on February 21, 1858, and died at the home of his son, Dr. Harold M. Camp, at 322 South B Street, Monmouth, Illinois, at 1:00 P. M., Monday, October 30, 1933.

Dr. Camp was graduated from the College of Physicians and Surgeons, then the Medical Department of the University of Iowa, at Keokuk, on March 1, 1880. He practiced his chosen profession continuously at Brooklyn, Illinois, for 47 years, then moved to Augusta where he had practiced for the past six years.

Dr. Camp knew all of the hardships of the country physician as for many years, during the winter months, he was compelled to use horse and buggy, cart, and many times go horseback on the regular calls. During the later years of his practice he enjoyed the benefits of modern travel and roads.

Dr. Camp was united in marriage to Fanette T. Taylor, daughter of Henry W. and Cornelia Manlove Taylor, of Brooklyn, on April 6, 1881, and to this union were born, Lorin T. Camp, who died in 1908, Dr. Harold M. Camp, Monmouth; Mrs. Ruth E. Craig, St. Paul, Minnesota; and Fred L. Camp of Huntsville. Dr. and Mrs. Camp celebrated their fifty-second wedding anniversary last April, and Mrs. Camp, the daughter, and two sons, one sister, Mrs. Mary L. Henderson of Los Angeles, California; three granddaughters and two grandsons survive.

He was a member of the Presbyterian Church, and until his illness prevented it, taught his Sunday School Class regularly. He was a member of the Hancock County Medical Society, Illinois State Medical Society, and a Fellow of the American Medical Association, a member of Mohammed Temple, A.A.O.N.M.S., Peoria, Almoner Commandery, No. 32, at Augusta, Illinois, and of LaMoine Lodge No. 935 A. F. & A. M., at Brooklyn.

Funeral services were conducted at the Presbyterian Church, Brooklyn, Illinois, on Wednes-

day afternoon, November 1, at 2:00 P. M., in charge of Rev. John M. Thompson of Warsaw. Services at the grave was conducted by the Masonic fraternity.

Dr. Camp went through the old saddle bag days, and his son, Dr. Harold M. Camp, has in his possession a pair of unusually fine saddle bags which he used fifty years ago, when he covered an entire county.

Dr. Camp was unusually interested in psychiatry, and had in his library probably one hundred volumes on this subject alone. During his fifty-three years of practice, he accumulated a library of some fifteen hundred volumes covering every subject in the entire medical and surgi-

cal field. Although spending his entire professional life in the country, he attended medical meetings regularly, both near and far, and took a number of long post graduate courses, at fairly regular intervals for forty years.

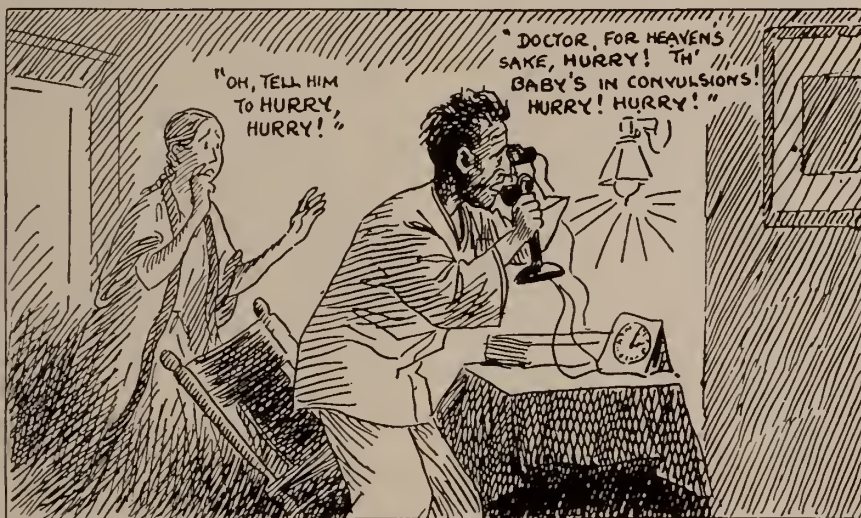
ADVERTISING SOLICITORS WANTED

The ILLINOIS MEDICAL JOURNAL desires in Chicago and in each of the principal cities in the United States solicitors, preferably persons with medical advertising experience. No guaranteed salary. Compensation solely on commission basis.

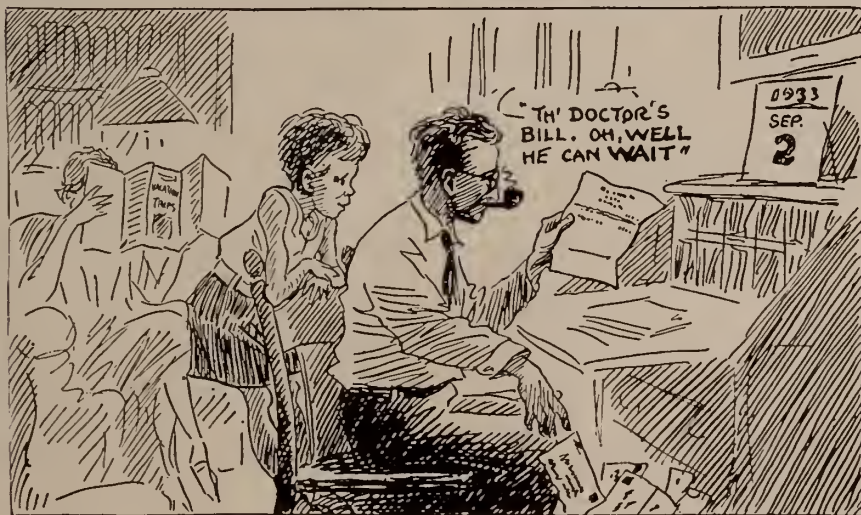
ILLINOIS MEDICAL JOURNAL

6221 Kenmore Ave., Chicago, Illinois.

WAITING FOR THE DOCTOR AND MAKING THE DOCTOR WAIT



When it's important that the baby lives.



When it's unimportant whether the doctor lives.

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Correspondence

THE CRUSADE AGAINST CANCER

Cancer research work is being actively carried on in all the large cities by both medical and lay organization, but though much appreciated by the smaller communities it is not being carried on by them as actively as it should be. The organization of the crusade against cancer must be based mainly on a wide publicity campaign and on the constant training of the physician. Histopathologic research is necessary for the purposes of early diagnosis and can be managed by the pathologist of any well organized hospital. An annual toll of 200,000 persons is to be regarded as the basic figure in this country and therefore every county medical society in our state should have a tumor clinic at one or more hospitals as part of their work for cancer control. Such a group staffed by some of their own confreres especially interested in cancer clinics and tissue diagnosis will be fascinating and helpful to all, and lead to the early use of surgical intervention or the application of physical agents.

These clinics being a part of the society's activities can be operated uniformly in an advisory capacity only, if desired, without financial gain to the sponsoring institution and without expense to the patient or the referring physician. They may meet once or twice a month, depending on the size of the hospital and the material available. Such tumor clinics will increase the knowledge and the capacity of a large group of physicians and also of many institutions and thus carry on research with greater facility and at a minimal expense. *If you haven't a cancer clinic in your county medical society, why not?* At this time, when we are not so busy, these clinics will not only be taken care of easily, but can be in the nature of a past graduate course along cancer lines.

Public Policy Committee,
Illinois State Medical Society.

DOCTOR PALMER FINLEY EXPLAINS HIS ATTITUDE ON MATERNAL MORTALITY

Madison, Nebraska, October 18, 1933.

To the Editor: I noticed your editorial comment in the last ILLINOIS MEDICAL JOURNAL on Palmer Finley and his book "The Story of Childbirth,"

and since Dr. Finley is a personal friend of mine I sent him the JOURNAL. His reply and comment are enclosed herewith.

F. A. LONG, M. D.,
Editor, Nebraska State Journal.

The following is Dr. Palmer's letter:

Omaha, Neb., Oct. 16, 1933.

DR. F. A. LONG,
Madison, Nebraska.

My dear Dr. Long:

Many thanks for the editorial in the October number of the ILLINOIS MEDICAL JOURNAL. If the editor had taken the trouble to refer to the copy of *The Story of Childbirth* sent to him in August by my publishers, he would have found that *Time* erred in crediting me with the statement: "It is generally agreed that the United States is the unsafest place in the world to have a baby"—(see page 235). This was a quotation from an eminent obstetrician and not my own expression. The remaining portion of the paragraph is correctly stated and credited.

What I did say (page 218) is as follows: "The indictment has been made and often repeated in the medical and lay press that the maternal mortality in the United States is the highest in the civilized world; and, moreover, that the rate has not been lowered since 1915 and not appreciably lowered for a much longer period of time. The White House Conference (I was a member of this Conference) is not willing to go on record as confirming this statement, but it does submit undeniable evidence that the maternal and infant mortality in the United States ranks high among the civilized nations of the world.

This, I believe, is a fair statement of fact based upon the most reliable statistics at our disposal in Washington. I am in full accord with the editor of the ILLINOIS MEDICAL JOURNAL in resenting the sensational writings in the lay press when such writings over-stress the facts for dramatic effect. Our maternal mortality is relatively too high and we need the cooperation of the public in reducing it at least to the level of those nations that are making the best showing (Sweden, etc.) and I have faith that in another decade or two this will be accomplished.

Cordially yours,

PALMER FINLEY.

ONLY TWELVE COOK COUNTY PHYSICIANS ON THE RELIEF ROLLS

During the past six months, articles have appeared in the Daily Press, stating that seven hundred physicians in Cook County were on the Relief Rolls.

Each time this statement appeared, communications were written to ascertain the basis for this number. At no time, were we able to find anyone who could definitely state whether the alleged number was accurate.

In an effort to furnish the members of the Chicago Medical Society with authentic information, a request was made at the Bureau of Public Welfare of Cook County to check the various relief lists in an attempt to arrive at an accurate number of physicians actually receiving relief.

We quote from a letter dated October 18th and signed by Ruth Coleman, Assistant Director, Cook County Bureau of Public Welfare: "I have located the report of the Small Trades investigation which included professional persons. Their report, as of September 1, 1933, showed that 12 persons classified as physicians were receiving aid from the Unemployment Relief Service Division or the Field Service Division of the Cook County Bureau of Public Welfare or from the Jewish Social Service Bureau, or from the United Charities."

C. M. S. Bulletin THOMAS P. FOLEY,
Secretary, Chicago Medical Society.

MEDICAL CARE OF THE INDIGENT

The medical care of the indigent has been a vital problem in every community throughout the country during the past two or three years. With the large number of unemployed, low prices for farm commodities, and the high overhead of the physician, he probably has had as much reason for giving this subject serious consideration as any other man in our business or professional world.

The Illinois law places the burden of caring for the indigent on the township, as the basic unit of our government, consequently in many communities funds available have limited the payment for medical care so much that physicians have received only a small percentage of their regular charges for medical care of the unemployed indigents.

The Federal Relief Administration a few weeks ago, released Rules and Regulations No. 7, governing the medical care of the unemployed indigents receiving aid from Federal funds. They ask the State and County Medical Societies to submit a program based on Rules and Regulations No. 7, for giving the necessary care to those unemployed indigents throughout the state. These rules and regulations were published in the Journal of the American Medical Association, on September 23, 1933, and they should be read carefully by every physician in Illinois so that he will be thoroughly familiar with them.

It has been the policy of the Illinois Emergency Relief Commission to pay for medical care of indigents only in those communities where local funds are entirely exhausted, having in mind the conservation of funds available for relief care.

The Illinois State Medical Society through the Council, selected a committee of seven to draw up a program which when approved by the Committee, was to be submitted to the State and Federal Relief Organizations. This program has been adopted by the Committee, and has been submitted to the Relief Commission for their approval.

Every County Medical Society in Illinois has been notified of this action, and has received definite information concerning it, from the Secretary of the Illinois State Medical Society. The Committee on Medical Economics has attempted during the past two months, to get some definite information from each county society, relative to the method of giving medical care to indigents in the various counties, the percentage of regular charges allowed, and the approximate amount of money that has been expended in each township in Illinois for this purpose during the past year.

Although several letters have been sent out urging an early reply to our questionnaire, there are many counties in Illinois which have not as yet sent in their data. In order that the State Medical Society can work to the best advantage in getting a more equitable distribution of medical care to indigents, and seeing that physicians are better paid for this important work, it is essential that we have this information, and we again urge all societies which have not as yet submitted the data to our Secretary, as re-

quested, to procure the information and send it in at once.

The Illinois State Medical Society has been intensely interested in the subject of Medical Economics for many years, and have sent many speakers to county societies throughout the state to talk on the subject during the past seven years. We believe it is advisable for every active society in Illinois to have at least one meeting each year, devoted to a thorough consideration of the business side of medicine, which has been neglected so much in the past.

In the October number of the ILLINOIS MEDICAL JOURNAL the blank approved by the Society some years ago, for making periodic health examinations was printed. These blanks may be procured from Dr. Harold M. Camp, Secretary, Illinois State Medical Society, Monmouth, Illinois, at one cent each.

Periodic health examinations will give the business or professional man the best safeguard for his health, and every physician in Illinois should be ready to tell all inquiring friends what a periodic examination is, and what it means to the man having such an examination at regular intervals. These examinations of the apparently well, frequently reveal some abnormal condition which when detected in time, may be alleviated and give the individual a better opportunity to live his normal expectancy, whereas otherwise they may become so advanced before they are detected by the individual himself that they may shorten his life.

A speaker representing the Illinois State Medical Society recently when appearing before a large lay audience, talked on Periodic Health Examinations. After the talk was ended he offered to spend some fifteen or twenty minutes answering questions that his audience might ask. One man said, "Where can I procure such an examination?" while another said, "Why has my own physician not told me about such examinations, and their value to the average business man?" The average physician has been accused in the past of not being sufficiently interested in the subject of periodic health examinations to let his friends and patients know about them, and their value to the one receiving them. The Committee on Medical Economics is anxious to see every member of the Illinois State Medical Society making these examinations regularly and keeping adequate records of their findings so that these records will be of value in the future, when the individual comes back for their regular examination.

The Committee on Medical Economics is anxious to be of service to all county medical societies in Illinois, and we will do everything possible to help in a campaign for stimulating physicians in their interest of this subject. We have been asked to discuss various phases of the subject in the JOURNAL each month, so we will have something further to say on the subject next month. Committee on Medical Economics.

Edw. S. Hamilton, Chairman,

Kankakee, Illinois.

EVERY ETHICAL PHYSICIAN IN THE STATE SHOULD BELONG TO THE ILLINOIS STATE MEDICAL SOCIETY

In numbers there is strength. A united medical profession can brush away any and all obstacles. Are all the eligible physicians in your county members of your local medical society? If non-members of the local society are discovered get busy and try to induce them to join at the earliest opportunity.

Since the publication of the last edition of

Names in Capitals indicate Fellows of the American Medical Association.

ARLINGTON HEIGHTS, 4,997, BARTLETT, 504, COOK

COOK

BEST, BRUCE TAYLOR

Elfeld, Edward A. (H)

Gable, Edwin Otis

KIONKA, PAUL FRED'K

McClintock, John Calvin

PFAFF, EARL KESLEY

STAIB, OTTO WM.

STEVENS, EDWIN LUTHER

Treichler, Martin John

BELLWOOD, 4,991, COOK

MLADICK, EDWARD ANTHONY

Sweeley, Merle E.

BERWYN, 47,027, COOK

Allen, Geo. Douglas, 6537 W. Roosevelt Rd.

Becht, Frank Christian, 7039 W. 34th St.; office, 3239 Grove Ave.

Bennowitz, Anthony Ilugo
(See Cicero)

our national directory, hundreds of recent graduates have located in cities in Illinois. Great numbers have moved within the state from one city to another; an alarming number of physicians have died in the interim; hundreds have moved to other states and a similar number have come into Illinois from other commonwealths.

Below we publish an up-to-date list of physicians residing in towns and cities of Cook County outside of Chicago. The publication of this list should facilitate the officers of the local society in recruiting new members.

BISHOP, ADOLPH EDWARD (290 Southcote Rd., Riverside); office, 6213 W. 22nd St.

Brown, Artemas
(See Chicago)

Bunata, Emil Jerry, 6805 W. 22d St. Busch, Geo. C., 6238 W. 22d St.

CAPEK, LADISLAV V., 1843 Kenilworth Ave.; office, 6340 W. Roosevelt Rd.

CARDER, BRYAN JAMES, 6318 Ogden Ave.; office, 6626 W. 22d St.

CARLSON, GUY EDWIN, 1918 S. Kenilworth Ave.; office, 6756 W. 22d St.

CHIVATAL, JAMES F., 2313 S. Scoville Ave.

DEANE, FRANK HERBERT, 7034 W. 35th St.; office, 3144 Oak Park Ave.

DVORAK, VACLAV GEO. (1810 S. Springfield Ave., Chicago); office, 6226 W. 22nd St.

ECHERER, TALLY JOHN, 2240 S. Ridgeland Ave.; office, 6324 W. 22d St.

Esau, Jacob Nick, 1326 S. Cuyler Ave.

FARA, FRANK JOHN

(See Chicago)

Farrell, Edward Jos., Berwyn Hospital

Fischer, Oscar G.

(See Chicago)

FOUCEK, BOHUMIL CHAS., 1928 S. Highland Ave.; office, 2148 S. Ridgeland Ave.

GOOD, GEORGE WELLINGTON, 3201 Ridgeland Ave.

Griffith, Paul Russell, Berwyn Hospital

Grout, Benj. Chase, 6846 Roosevelt Rd. Hall, Albert Winter, 3136 Wisconsin Ave.; office, 6820 Windsor Ave.

HINDS, ANNA BOLENDER, 3337 Oak Park Ave.

HURBY, FRANK EDWARD

(See Chicago)

HUMEL, RICHARD JAMES, 6346 W. 22d St.

HUMMON, EMMA M., 3318 Oak Park Ave.

HUMMON, IRVIN F., 3318 Oak Park Ave.

Igloe, Max Chas., 6812 Windsor Ave.

JOHNSON, RUSSELL CONRAD, 3428 Kenilworth Ave.; office, 3245 Oak Park Ave.

Kepner, Raymond Brandt

(See Chicago)

KORZENIEWSKI, JOS.

(See Cicero)

KOTALIK, FRANK JOS., 3224 Home Ave.; office, 6348 W. 26th St.

Krupka, John Miles

(See Cicero)

KVITEK, LOUIS CHAS.

(See Chicago)

LAWRENCE, WALTER A. (1007 Wesley Ave., Oak Park); office, 6400 W. 22d St.

Luce, Fredk. A.

(See Cicero)

LUHAN, JOS. ANTON, 2310 S. Euclid Ave.

MOE, CHESTER CHAS., 3201 Home Ave.; office, 6820 Windsor Ave.

MOLERE, C. S., 3503 Kenilworth Ave.

PATERA, FRANK JOSEPH

(See Chicago)

PERCIVAL, JOS. P., 1942 S. Scoville Ave.

PLZAK, LOUIS FRANK

(See Cicero)

REYNOLDS, EDWIN CHAS., 6746 W. 21st St.; office, 6805 W. 22d St.

RUSSELL, EDWIN PHILLIPS (Riverside); office 6820 Windsor Ave.

SAZAMA, JOHN JOS. (Riverside); office, 6207 W. 22d St.

Slavik, Edward Frank

(See Cicero)

SPIERING, ARTHUR KERN

(See Brookfield)

STEPHENS, VIRGIL RAY, 3121 Wisconsin Ave.; office, 6820 Windsor Ave.

Sterba, Jos. V.

(See Oak Park)

STOLFA, LADISLAV

(See Cicero)

Tetrev, Jaroslav

(See Chicago)

Thompson, Osmond Peter

(See Chicago)

Tomlinson, Wm. D., 6440 Sinclair Ave.

Tovarek, Jos. John, 6207 W. 22d St.

VYNALAK, WM. JOHN (Riverside); office, 6804 Windsor Ave. (30 N. Michigan Blvd., Chicago)

Wagner, Ben Elmer, 6804 Windsor Ave.

Wiese, Milton Arthur, 1905 S. Clarence Ave.

Wright, Preston E., 3520 Clinton Ave.; office, 3507 Oak Park Ave.

BLUE ISLAND, 16,534, COOK

AIKEN, RALPH CHAS., 12516 S. Elm St.; office, 13053 S. Western Ave.

BIRCHWOOD, EUGENE (7018 Creiger Ave., Chicago); office, 12755 Western Ave.

BYFORD, WM. HOLLAND, 12754 S. Maple Ave.

Chryanowski, Leo Alexander, St. Francis Hospital

DAVIES, CHAS. GEO., 2449 W. High St.

Diffenderfer, Ralph Ewing, 12524 S. Western Ave.

DOEPP, EDWARD A., 12941 S. Gregory St.

DOEPP, WM. CLARENCE, 12941 S. Gregory St.

HAWK, MORTIMER CAPSY, 12800 S. Maple Ave.

Hotchkin, Wm. F. (H), 13145 S. Western Ave.

JAMES, ROBT. LEE, 2418 W. York St.

JEZISIK, RAYMOND HENRY, 2556 W. Burr Oak Ave.; office, 13104 S. Western Ave.

KARST, FREDK. ARTHUR

(See Chicago)

Krueger, Frances McCord, not in practice; 432 Maple Ave.

LALLY, FRANK HUGHES, 2643 W. Burr Oak Ave.; office, 12947 S. Western Ave.

NEDRY, CLIVE JAMES (9200 Loomis St., Chicago); office, 12757 Western Ave.

PRONGER, EARLE JAMES WM., 2418 W. Burr Oak Ave.; office, 12915 S. Western Ave.

Rocmisch, Albert John, not in practice—2336 W. Vermont St.

Runde, Henry Bernard, 12918 S. Western Ave.

Smith, Kenneth John, 2430 Prairie St.

SNIDER, ALVIN BRICKER, 2458 W. Walnut St.; office, 12950 S. Western Ave.

STADLE, WENDELL HARVEY, 12602 Maple Ave.; 12665 S. Western Ave.

VLOEDMAN, DERK ANDREW, 12152 Ann St.; office, 12700 Western Ave.

BROOKFIELD, 10,035, COOK

BELTING, JOHN THEODORE

Camp, Ella

SPIERING, ARTHUR KERN—also office (6756 W. 22d St., Berwyn)

Winsett, Clifford Vane

CALUMET CITY, 12,298, COOK

BASCOMB, MARSHALL ROYTON Bradley, Harley A.

CLANCY, JAMES FRANCIS

(See Hammond, Ind.)

DIAMONDSTEIN, JOS., State Med. Assn.—796 State Line St.

ELLEDGE, RAY

(See Hammond, Ind.)

Feinsot, Irving, 604 State Line St.

FORSTER, NESLEN KELLIHER (See Hammond, Ind.)

HOWARD, WM. HARRY

(See Hammond, Ind.)

Matushek, Wm. Anton

NADAI, ANDREW, 431 157th St.; office, 520 State Line St.

NEIER, OLIVER CLAY

(See Hammond, Ind.)

WOLK, MARCUS GERSH, 614 State Line St.

CHICAGO HEIGHTS, 22,321, COOK

Ballenger, Oscar L., 1608 Center Ave.; office, 197 E. 16th St.

BLIM, SPENCER PHELPS, 1645 Thorn St.; office, 25 Illinois St.

BLODGETT, PLINY RUSSELL, 61 W. Main St.; office, 1602 Otto Blvd.

Boyer, John S.

(See Crete)

Brown, Edgar O'Donnell, 1531 Otto Blvd.; office, 1618 Otto Blvd.

Cornet, Alphon L., 212 W. 16th St.; office, 78 Illinois St.

DALE, HARRY WILFORD, 241 W. 16th St.; office, 78 Illinois St.

DOBROW, MAX, 347 W. 16th Pl.; office, 228 E. 16th St.

DONALDSON, HENRY BARDWELL, 121 Country Club Rd.; office, 25 Illinois St.

Gorrell, Ralph Lufkin, Chicago Eye, Ear, Nose and Throat Hospital

GORRELL, TALBOT JOHN II. (Flossmoor); 45 E. 16th St.

HARMAN, IRA CHASE, 1540 Scott Ave.; office, 78 Illinois St.

- HARNETT, DAVID LOUIS, 1515 Vincennes Ave.; office, 1602 Otto Blvd.
- HAY, EDWARD F., 1524 Schilling Ave.; office, 5 Illinois St.
- Kelly, Timothy Hubert, St. James Hospital
- KLINGLER, ELLIS GISE, 149 W. 14th St.; office, 1602 Otto Blvd.
- LaMarre, Victor Naxaire, 260 W. 15th Pl.; office, 78 Illinois St.
- Long, Hugo, 1 Illinois St.
- MARTIN, ERNEST CHAS (col.), 1441 Center Ave.; office, 229 E. 16th St.
- MCCRADIE, RAYMOND STEWART, 1416 Campbell Ave.; office, 22 Illinois St.
- Medaris, Anna, 21 W. 21st St.
- PANNENBORG, ARTHUR HERMAN, 1562 Schilling Ave.; office, 23 Illinois St.
- Pike, Chas. Heyfield, 46 W. 15th St.; office, 23 Illinois St.
- ROSINI, RENATO, 212 E. 16th St.
- Sadlek, Lawrence Anthony, 1616 Otto Blvd.
- SCARBOROUGH, CLAUDE MURPHY, 104 W. 15th St.; office, 24 Illinois St.
- Spencer, Richard Vance, W. 14th St.; office, 1602 Otto Blvd.
- STAPLETON, THOS. M., 7 E. 16th St.; office, 78 Illinois St.
- STRAND, MARTIN, 1602 Euclid Ave.; office, 25 Illinois St.
- CICERO, 66,602, COOK**
- ALSTROM, ERNEST FREDK., 1300 S. 49th Ave.
- BARNES, JAMES R. E., 2133 S. 58th Ave.
- BARTIZAL, JOHN FRANK (Riverside); office, 6001 W. 22d St.
- Baumrucker, Geo. Otto, 5946 Cermak Rd.
- Bennewitz, Anthony Hugo (2234 S. Oak Park Ave., Berwyn); office, 6147 W. 22d St.
- Bloom, Chas. Roht., 2901 48th Ct.
- CARLS, FREDK. GEO., 1331 S. 57th Ct.; office, 5607 Roosevelt Rd.
- Clark, Floyd Marion, 1207 S. Cicero Ave.
- DOWIAT, STANISLAUS ALFONS, 5147 W. 25th St.
- FOUSER, CHESTER WATSON, 4900 W. 22d St.
- Herman, Alfred Helmer, 2204 S. Austin Blvd.
- HINN, OTTO WML (1025 S. Austin Blvd., Chicago); office, 5203 W. 25th St.
- Holecsek, Frank, 1912 S. 61st Ave.
- Hood, Addie Clark, not in practice—5222 W. 24th St.
- HOOD, JACOB J., 5222 W. 24th St.; office, 5147 W. 22d St.
- HOUGHTON, WALDO JEROME (Riverside); office, 6001 W. 26th St.
- JIRKA, FRANK JOSEPH (See Chicago)
- KLUZAK, JOHN FRANK, 1909 S. 58th Ave.; office, 5622 W. 22d St.
- KOPTIK, GEO. (See Chicago)
- KORZENIEWSKI, JOS. (2937 S. Maple Ave., Berwyn); office, 3000 S. 52d Ave.
- KRAEMER, HORST CHAS. (See Chicago)
- KROPACEK, JOHN ANTHONY (See Chicago)
- Krupka, John Miles (3012 Maple Ave., Berwyn); office, 5802 W. 22d St.
- Lloyd, Richard, 5302 25th Pl.
- Luce, Fredk. A., 2646 S. Austin Blvd.; office (6243 W. 22d St., Berwyn)
- Mann, Sigmund (424 S. Austin Blvd., Oak Park); office, 5146 W. 25th St.
- MAURER, FRANK ROY, 1326 S. Austin Blvd.; office, 4800 W. 22d St.
- McLallen, James Claude (Riverside); office, 5102 W. 29th Pl.
- PECHOUS, BOHUMIL EDWARD, 1804 S. 59th Ct.; office, 5800 W. 22d St.
- Pietroski, Jos. Conrad, 4926 W. 30th Pl.
- PLZAK, LOUIS FRANK, 2435 S. 59th Ave.; office (2132 S. Oak Park Ave., Berwyn)
- POKORNEY, FRANK J., 5147 W. 22d St.
- Remhe, Boyd C., 2206 S. 50th St.
- ROSENGARD, JEROME LIVINGSTON (See Chicago)
- Russell, Lawrence Adolph, 3036 S. 52d Ave.
- SHINGLMAN, JOS., 1638 S. 50th Ave.; office, 4930 W. 13th St.
- SLADEK, BOHUMIL, 2517 60th Ct.
- Slavik, Edward Frank (1912 S. Clarence Ave., Berwyn); office, 2137 S. Lomhard Ave.
- SMITH, JOHN COLVILLE (Riverside); office, 2227 S. 52d Ave.
- STOLFA, LADISLAV (2401 Gunderson Ave., Berwyn); office, 2137 S. 62d Ave.
- Tetrev, Henry (See Chicago)
- Thieda, Arthur Alexander, 1301 S. 49th Ct.
- TIERNEY, CHAS. JOS., 5132 W. 24th St.
- TIMMER, WM. L., 1233 58th Ct.
- TRAFELET, EMIL THEODORE (See Chicago)
- VETTEN, CORNELIUS NICHOLAS, 6001 Roosevelt Rd.
- Waligora, Stanley B. (H), 4907 W. 30th Pl.
- WALTER, OTIS MONROE (See Chicago)
- WARD, BENJ. FRANKLIN, 2300 S. Austin Blvd.
- WARD, MILDRED DOUBECK, 2300 S. Austin Blvd.
- WARNING, OTTO F. (See Chicago)
- YERGER, CHAS. FRANCIS (See Chicago)
- Zaletel, Rudolph Peter, 4830 W. 22d St.
- ZELEZNY-BAUMRUCKER, OTILIE (947 Williams St., River Forest); office, 5946 W. 22d St.
- DES PLAINES, 8,798, COOK**
- Bernis, Chas.
- Campbell, Wm. Roy
- EARLE, CLARENCE A. Fahey, Patrick Jos.
- Fuhlrigge, Arthur Alfred
- HELLER, HENRY FREDK.
- HOFFMAN, ERNEST HERMAN (See Chicago)
- KRUEGER, JOHN H. F.
- MIERS, EDW.
- NAFFZIGER, ARMAND
- PURVES, ARTHUR MATTHEW
- DOLTON, 2,923, COOK**
- THOMSEN, CARL H.
- WEIDNER, MORRIS ROBT., SR.
- WEIDNER, MORRIS ROBT., JR.
- ELMWOOD PARK (CHICAGO P. O.), 11,270, COOK**
- Bertaut, Clarence Jos. (See Chicago)
- Davenport, Harold Alvin (See Chicago)
- Gramer, Edward Phillip (See Chicago)
- LEACH, JAMES JOS., 7700 Sunset Dr.; office, 12½ Elmwood Parkway
- NEDZEL, ALEXANDER J. (See Chicago)
- SUMMERS, CHAS. RAYMOND, 7753 Elmgrove Dr.; office, 7643 Belmont Ave.
- Secunda, Herman Harold, 7209 W. Grand Ave.
- TORPIN, RICHARD (See Chicago)
- Varney, Franklin Thos.
- EVANSTON, COOK**
- Ahrams, Mark P. (842 Leland Ave., Chicago); office, 1819 Church St.
- Alexander, Wm. Graham, 1430 Chicago Ave.; office, 636 Church St.
- Allen, Thomas Dyer (See Chicago)
- Andrews, Benjamin Franklin (See Chicago)
- Atkinson, Arthur John (See Chicago)
- Baird, Mary Brooks, 1707 Ridge Ave.; office, 1323 Hinman Ave.
- Balderston, Steven Victor, 1205 Judson Ave.; office, 636 Church St.
- Barber, Knowlton E. (See Chicago)
- Barnham, Wm. Stanley, 1321 Oak Ave.; office, 636 Church St.
- Barry, Geo. Fravel, 1640 Chicago Ave.
- Basso, Peter (See Chicago)
- Batko, John Benj. (See Chicago)
- Beck, Estel Thorton, 1231 Emmerson St.
- Beecher, Geo. Nevin (See Chicago)
- Black, Arthur D. (See Chicago)
- Blessing, Arthur, 2151 Gray Ave.; office, 636 Church St.
- Bridgroom, Hugh G., 834 Seward St.; office, 636 Church St.
- Brode, Willard D. (See Chicago)
- Broman, Martin R. (See Chicago)
- Brown, Seth Edwin, 718 Forest Ave.; office, 1604 Chicago Ave.
- Brunet, Walter M. (See Chicago)
- Bulkley, Nathan C., 728 Elmwood Ave.; office, 708 Church St.
- Burky, Fred. Wm., 725 Simpson St.; office, 636 Church St.
- Burket, Walter C., 2123 Ridge Ave.; office, 636 Church St.

- Burlingame, John H., 919 Washington St.
- Burr, Albert H., 921 Elmwood Ave.
- Butler, Isabella Maud G., 2306 Foster St.; office, 1918 Asbury Ave.
- Canright, Harry Lee (See Chicago)
- Carr, James Gray, 2306 Ridge Ave.; office, 636 Church St.
- Case, Helena M., 629 Garrett Place
- Case, James T. (See Chicago)
- Christopher, Fred'k (See Chicago)
- Clark, Dwight F., 1625 Hinman Ave.; office, 636 Church St.
- Clark, Elbert (635 Blackthorn Rd., Winnetka); office, 636 Church St.
- Clyde, Harry Edwards, 520 Main St.
- Colwell, Arthur R. (See Chicago)
- Coote, Frank T. (See Chicago)
- Corbus, Budd C. (See Chicago)
- Creely, Wilmer R. (See Chicago)
- Crowley, Lawrence J., 708 Church St.
- Curtis, Arthur H. (See Chicago)
- Cutter, Irving S. (See Chicago)
- Dakin, Frank C., 1134 Hinman Ave.
- Danforth, Wm. Clark, 1620 Hinman Ave.; office, 636 Church St.
- Darling, Charles G. (See Chicago)
- David, Frank E. (See Chicago)
- David, Vernon C. (See Chicago)
- Davis, Carl B. (See Chicago)
- de Takats, Geza (See Chicago)
- Dick, Geo. F. (See Chicago)
- Dick Gladys, Rowena Henry, Evans-ton Hospital
- Dodd, Oscar, 1419 Chicago Ave.; office, 636 Church St.
- Doerann, August Fred'k, 1230 Wesley Ave.
- Drew, Henry C. (See Hines)
- DuBois, Leo Charles (See Chicago)
- Edmonds, Fred J., 723 Reba Place
- Eiss, Dan'l W. (See Chicago)
- Ewert, Earl E. (See Chicago)
- Fitzgerald, Gerald J., 811 Dobson St.; office, 708 Church St.
- Fowler, Edson B. (See Chicago)
- Galloway, Charles E., Hubbard Woods; office, 636 Church St.
- Galloway, Thos. C., 425 Grove St.; office, 636 Church St.
- Geiger, Clyde J. (See Chicago)
- Goltra, John N., 1233 Judson Ave.; office, 800 Davis St.
- Goodsmith, Howard M. (See Chicago)
- Greenwood, Glenn J., 708 Church St.
- Gregory, Junius C., 2947 Grant St.; office, 529 Main St.
- Grier, James P., 2752 Eastwood Ave.; office, 636 Church St.
- Grier, Rob't M., 1714 Ashbury Ave.; office, 636 Church St.
- Grulee, Clifford G. (See Chicago)
- Hagan, Jasoph Lawrence (Kenilworth); office, 636 Church St.
- Hartlett, Elvin M., 1242 Asbury Ave.; office, 636 Church St.
- Haskins, Geo. Wm. (See Chicago)
- Hathaway, Rob't J., 1710 Orington Ave.; office, 636 Church St.
- Hatton, Edward H. (See Chicago)
- Hauser, Emil D. (See Chicago)
- Head, Jerom R. (See Chicago)
- Hedberg, Davis L., 2129 Ridge Ave.; office, 2605 Prairie Ave.
- Hedge, Harry M. (See Chicago)
- Hilton, Etta S. R. (See Chicago)
- Hobart, Marcus H., 621 Foster St.; office, 636 Church St.
- Halloway, Howard J., 1317 Lyons Ave.; office, 636 Church St.
- Hopkins, Clarence W. (See Chicago)
- Horan, Francis P., 1023 Sheridan Rd.; office, 800 Davis St.
- Huggins, Benj. H., 731 Colfax St.; office, 636 Church St.
- Huggins, Rob't V., 636 Church St.
- Hurlbut, Sherman R. (See Chicago)
- Hynes, Edward J., 2213 Ridge Ave.; office, 529 Main St.
- Jackson, Geo. Henry, Jr. (See Chicago)
- Jackwith, Walter A. (See Chicago)
- Kappelman, John A., 2027 Noyes Ave.
- Kappes, Louise O., 2340 Hartray Ave.; office, 636 Church St.
- Kelly, Earl D., 1017 Grove Ave.
- Kennedy, Clarence E., 2217 Grant St.
- Keyes, Albert B. (See Chicago)
- Kirby, Frank B., 1608 Hinman Ave.
- Klinetop, Arthur F. (See Chicago)
- Lang, Sam'l J., 1414 Lincoln St.; office, 636 Church St.
- Lassagne, Victor F., 718 Noyes St.
- Lawson, Lawrence J., 2310 Ewing Ave.; office, 636 Church St.
- Lenth, Vincent T. J. (See Chicago)
- Lohr, Josephine W., 625 Noyes St.
- Loneragan, Robert C., 422 Davis St.; office, 636 Church St.
- Luessman, Harold Wm., 619 Ridge Ave.; office, 603 Main St.
- Lusky, Herbert O., 2315 Lincolnwood Dr.; office, 636 Church St.
- Macdonald, Hugh, 8718 St. Louis Ave.; office, 636 Church St.
- Machler, F. Patrick (See Chicago)
- Mackinzie, Henry W. D., (856 Sheridan Rd., Winnetka); office, 636 Church St.
- Maechtle, Everett W., 1509 Oak Ave.
- Mars, Hartley F. (See Chicago)
- Mars, Mary M., 735 Monroe St.
- Mason, Lorne W., 2505 Prairie Ave.; office, 1900 Central St.
- Mathews, Cora A., 636 Church St.
- McBride, Linn F. (See Chicago)
- McClure, Wm. B., 1406 Chicago Ave.; office, 636 Church St.
- McConahy, Mary R., 3200 Grant St.
- McEwen, Mary G., 1703 Chicago Ave.
- McGill, Ernest C., 1021 Lee St.; office, 636 Church St.
- McGuigan, Hugh A. (See Chicago)
- Mebane, David C., 1713 Sherman Ave.
- Maier, Granthon, Jr. (See Chicago)
- Meling, Nels Christian (See Chicago)
- Merriam, John R., 562 Sheridan Sq.
- Meyer, Harold I. (See Chicago)
- Minsk, Lewis D. (See Chicago)
- Mitchell, John M., 1456 Oak Ave.; office, 636 Church St.
- Mock, Harry E. (See Chicago)
- Morrill, Warren P., 2536 Hurd Ave.
- Mulder, Lenard, 2500 Lawndale St.; office, 636 Church St.
- Musselman, Geo. H. (See Chicago)
- Nelson, Tell (See Chicago)
- Nesselrod, Jerrold P., 734 Noyes St.; office, 636 Church St.
- Noble, Wm. L. (See Chicago)
- O'Neil, Wm. E., 2044 Sheridan Rd.; office, 636 Church St.
- Parks, Wm. Ross, 1835 Chicago Ave.; office, 636 Church St.
- Patillo, Richard S. (See Chicago)
- Peck, David B. (See Chicago)
- Peck, Wesley H. (See Chicago)
- Penn, Abelard R. (col.), 2620 Brown Ave.
- Perry, Ethel B. (See Chicago)
- Perry, Gentz, 2636 Central Park Ave.
- Pietrowicz, Stephen R. (See Chicago)
- Pitts, Howard (See Chicago)
- Pollard, John W. H., 1014 Main St.; office, 1806 Maple Ave.
- Pollock, Lewis John (See Chicago)
- Pope, Charles E. (See Chicago)
- Pope, Mary Howe, 2017 Sherman Ave.
- Porter, John L., 636 Church St.
- Potts, Herbert A. (See Chicago)
- Quint, Harold A., 2815 Hartzell St.; office, 636 Church St.
- Rainey, Clarence W. (See Chicago)
- Ranson, Stephen W. (See Chicago)
- Rappaport, Benj., 2828 Harrison St.; office, 708 Church St.
- Rayner, Herbert W. (See Chicago)
- Rector, Frank L., 823 Case St.
- Rhoads, Paul S., 2316 Park Pl.; office, 636 Church St.
- Richter, Harry A. (400 Linden Ave., Wilmette); office, 636 Church St.
- Roberts, Joseph F., Jr. (col.), 1836 Dodge Ave.
- Roler, Albert H., 708 Church St.
- Rudersdorf, Oscar L., 1205 Mulford St.; office, 603 Main St.
- Sanner, James E. (See Chicago)
- Sattler, Phillip, 801 Monroe St.
- Sauer, Lewis W. (454 Sheridan Rd., Winnetka); office, 636 Church St.
- Schacht, Fred'k W. (See Chicago)
- Schaffer, David N. (See Chicago)
- Schier, Anton R. (See Chicago)
- Schneider, Philip F., 1570 Oak Ave.; office, 636 Church St.
- Schrayner, Joseph, 800 Davis St.
- Schultz, Oscar T., 825 Main St.; office, 355 Ridge Ave.
- Scott, Russell A., 731 Lincoln St.; office, 636 Church St.
- Seidner, Maurice L. (See Chicago)
- Shaw, Noel G., office, 636 Church St.
- Sherrill, Arthur L. (See Chicago)
- Shutterly, Eugene E., 800 Davis St.
- Smith, Philip H., 2133 Ridge Ave.; office, 636 Church St.
- Smith, Wm. E., 1507 Oak Ave.
- Snow, Lucelle H., 500 Sheridan Rd.; office, 636 Church St.
- Soper, Gale R., 1704 Hinman Ave.; office, 636 Church St.
- Sprague, Jon P. (See Chicago)
- Stearns, Wm. G. (See Chicago)
- Stearns, Wm. M. (See Chicago)
- Steffens, George W., 2120 Lincoln St.; office, 636 Church St.
- Stormont, Dan'l L., 9133 Ewing Ave.; office, 636 Church St.
- Sutton, Don C. (See Chicago)
- Swan, Charles J., 425 Grove St.; office, 636 Church St.
- Swanson, Harry T., 2006 Harrison St.
- Tatge, Edward G., 1216 Simpson St.; office, 636 Church St.
- Thomas, G. R., 2145 Bennett Ave.
- Thompson, W. Moore (See Chicago)
- Todd, Charles J. (See Chicago)

Turnbull, Geo. C., 718 Noyes St.; office, 636 Church St.
 Turner, Edgar C., 815 Judson Ave.; office, 636 Church St.
 Tyson, Geo. F., 1033 Cleveland St.; office, 803 Chicago Ave.
 Underhill, Marshall S., 2643 Orrington Ave.; office, 636 Church St.
 Vermeren, John C. (See Chicago)
 Wagoner, Guy L. (See Chicago)
 Waner, Wm. L., 136 Clyde Ave.; office, 636 Church St.
 Werth, Stephen S. (See Chicago)
 Westenberger, Lorenz H. (See Chicago)
 Whitefield, Geo. W., 1518 Hinman Ave.
 Whitley, Wm. R., 1141 Judson Ave.; office, 636 Church St.
 Williams, James L., 1319 Lincoln St.; office, 636 Church St.
 Williamson, Earl W. (See Chicago)
 Woley, Harry P. (See Chicago)
 Woodyatt, Rollin T. (See Chicago)
 Woolston, John Wesley (See Chicago)
 Wright, Charles G. (See Chicago)

EVERGREEN PARK

Beckering, Gerrit

FLOSSMOOR, 808, COOK

BLUE, ROBT B.
 (See Chicago)
 BROWN, WM. LEE
 (See Chicago)
 Gorrell, John Ellison
 (See Chicago Heights)
 GORRELL, TALBOTT JOHN H.
 (See Chicago Heights)
 Johnson, Chas. Henry
 (See Chicago)
 MILLER, WM.
 (See Chicago)

FOREST PARK, 14,555, COOK

BAUMGARTNER, GEO. JOHN, 7320 W. Madison St.
 DaCosta, Saml. N., 1026 Elgin Ave.
 Faxon, Donald Eugene
 (See Hines)
 Faxon, Ruby Marie Donaly
 (See Chicago)
 JENKINS, HILERD ENNO (River Forest); office, 7406 Madison St.
 KNOX, WM. BALMER (1122 Monroe Ave., River Forest); office, 7329 Madison St.
 LAMB CHAS. W., 509 Hannah Ave.
 MASSLOW, WM. C., 605 Hannah Ave.; office, 7509 Madison St.
 McNEIL, ALBERT GORDON, (554 Jackson Ave., River Forest); office, 7444 Madison St.
 NICHOLSON, GEO. PRICE
 (See Chicago)
 OCHS, MILTON MARQUETTE
 (See Oak Park)
 SODARO, JOS. CLARENCE (1427 N. Park Ave., River Forest); offices, 7348 Madison St. and (2004 Lake St., Melrose Park)

FRANKLIN PARK, 2,425, COOK

Dodge, Harold E.
 FRYBARGER, CLARENCE EDWARD

GLENCOE, 6,295, COOK

Alcorn, Kent Archibald
 BUEHLER, WM. EMMETT
 (See Chicago)
 Cleveland, Geo. Henry, retired
 GIFFORD, SANFORD ROBINSON
 (See Chicago)
 HOFFMAN, LOUIS GEO.
 (See Chicago)
 LOEWE, GILBERT MARTIN
 (See Winnetka)
 MINDERHOUT, WILL JOHN, SR.
 (See Chicago)
 ORCUTT, DWIGHT CHAPMAN
 (See Chicago)
 Richburg, Louis Allan
 Richburg, Welton Edwin
 RUEHL, MAX C.
 (See Chicago)
 SEARLE, CLAUDE HOWARD
 (See Chicago)
 SWEENEY, JOHN STEELE, not in practice
 Walsh, John Edward Lawrence, retired
 WILEY, HARRY DUNLAP

GLENVIEW, 1,886, COOK

Hammett, Harold
 Krumm, Theodore Herbert
 Starkey, Geo. Goddard, not in practice

HARVEY, 16,374, COOK

ALEXANDER, CHAS. BURTON, 43 E. 154th St.; office, 112 E. 154th St.
 ANDERSON, AUGUST REINHOLD, 15540 Center St.; office, 172 E. 154th St.
 BLAIR, JOHN WM.
 BRADLEY, CHAS. M.
 FRASER, STUART EVANS, 15024 Vine Ave.; office, 172 E. 154th St.
 GIESE, THEODORE, JR., 15430 Paulina St.; office, 160 E. 154th St.
 Harris, Everett Albert, 168 E. 154th St.
 HERCULES, CLARENCE ARVILLE, 15402 Turlington Ave.; office, 128 E. 154th St.
 Johnson, Brantley Mattauer, Ingalls Memorial Hospital
 Kultus, Theodore, 138 E. 155th St.
 Morse, McRome R., 15412 Center St.
 O'Dell, Lester Ely, 15629 Lexington Ave.; office, 160 E. 154th St.
 STEVENSON, BAYARD TAYLOR, 15232 Broadway
 THURLIMANN, OTMAR, 15605 S. Myrtle Ave.; office, 133 E. 154th St.
 Tuper, Harvey Willard
 Winston, Woody Maurice

HOMEWOOD, 3,227, COOK

BECKER, SAML. WM.
 (See Chicago)
 DILLON, ELMO EUGENE
 (See Chicago)
 DOEPP, WM. L.
 JANSON, CARL HELGE MAURITZ SCUPHAM, GEO. WM.
 (See Chicago)
 VAN WORMER, WELLINGTON CLARENCE — also office (Tinley Park)

KENILWORTH, 2,501, COOK

Brackin, Roy Ernest
 CHILCOTT, ISRAEL HENRY
 (See Chicago)
 HAGAN, JOS LAWRENCE
 (See Evanston)
 Henson, John Geo.
 Hollands, Augustus
 (See Chicago)
 ROBBINS, JAMES MERLE
 SOWERS, ALVA BOYD
 (See Chicago)
 SPACII, AMUEL B.
 (See Chicago)
 STOLP, RUFUS B.
 (See Wilmette)
 Walker, Herbert
 (See Chicago)
 WALKER, HASSELTINE
 STEPHENS (See Chicago)
 Wilson, Arthur W.

LA GRANGE, 10,103, COOK

Ahrens, Edward Guy, 702 W. Burling-ton Ave.
 Barclay, Robt. Donaldson (Argo)
 BLUMENSTOCK, JULIUS, 80 S. 5th Ave.
 Bowman, Dora Emma, not in practice
 R. D. 2
 Brown, Wm. D. H.
 (See Chicago)
 BUFORD, COLEMAN GRAVES
 (See Chicago)
 CARR, CLARENCE THOS., 61 6th Ave.; office, 14 S. 5th Ave.
 CARR, JESSE WASSON, 125 N. 5th Ave.; office, 14 S. 5th Ave.
 CLARKE, JAMES CUNNINGHAM, 139 6th Ave.; office, 80 S. 5th Ave.
 Costenbader, Clinton Franklin, 430 N. Waiola Ave.
 DANIELSON, WILFORD ALDRICH
 (See Chicago)
 DICK, PAUL GEOWEY
 (See Chicago)
 EDWARDS, ROBT. WM., 61 N. Edgewood Ave.; office, 618 W. Burl-ington Ave.
 EHRMANN, FRED. J. E.
 (See Chicago)
 Friedemann, Otto Herman, 323 Calen-dar Ave.; office, 72 S. 5th Ave.
 GARDINER, JOHN ALEXANDER, 403 N. Waiola Ave.; office, 23 W. Calendar Ave.
 HARVEY, ANDREW MAGEE
 (See Chicago)
 Haverstock, Horace Teal, 702 W. Burl-ington Ave.
 HAWLEY, CLARK W.
 (See Chicago)
 HOSPERS, ANTHONY JOHN (West-ern Springs)
 HUNTER, CHAS. WARREN, 23 W. Calendar Ave.
 Kellogg, Howard Butters, 702 W. Burl-ington Ave.
 Kendall, John Lee, not in practice—1019 Cossitt Ave.
 McCURE, CHAS. FRANCIS
 (See Chicago)
 McDougal, Thos. Cecil, 702 Burling-ton Ave.
 Napieralski, Stella Henrietta
 (See Chicago)

Rounds, Clara Wood
 Schwartz, Fannie Adele, 11 S. 5th Ave.
 SECOR, EDW. THOMAS, 72 S. 5th Ave.
 URSICH, JOS. EDWARD
 (See Chicago)
 Waddington, Algernon Henry
 (See Chicago)
 WATTERSON, WALTER HOBART,
 337 Blackstone Ave.
 Weber, Frank Schulte
 Welford, Norma Turner, 505 S. Kensington Ave.; office, 80 S. 5th Ave.

LANSING, 3,378, COOK
 SHAPMAN, JOHN VAN LIEW
 Stocki, Anton (H)
 VAN WORMER, FRANK BURTON
 (See Harvey)

LEMONT, 2,582, COOK
 Cauldwell, Earl Wm.
 LUDWIG, JOHN B.

LYONS, 4,787, COOK
 CHIASSON, MARCELLIN JEAN
 Davis, Wm.
 INGALLS, BERYL A.
 Spangler, Edward Louis

MATTESON, 736, COOK
 Rutz, Reinhold Albert

MAYWOOD, 25,829, COOK
 Arnal, Paul John, 1603 S. 7th Ave.
 BAKER, CHAS. W.
 (See Chicago)
 Bengtson, Bengt, Norman, 1603 S. 7th Ave.
 BROSMAN, ELEANOR SOPHIA
 MASSLOW, not in practice—1418 S. 8th St.
 CLEVELAND, ERNEST SCHUYLER
 (See Chicago)
 Cochems, Kenneth D., 825 S. 19th St.
 COFFMAN, SAML. WOLGAMUTT,
 408 S. 5th St.
 Davis, Amy Reams, 812 N. 6th Ave.
 Doctor, Wm. Raymond
 (See Hines)
 EDISON, ARTHUR ISADOR
 (See Chicago)
 Ensign, Chas. Francis
 (See Hines)
 FAIRFAX, AARON GRANT, 203 S. 13th Ave.
 Ginnan, Edward James, 1210 S. 17th Ave.
 Green, Louis Morris, 101 5th Ave.
 Haslett, Percy Parker
 (See Hines)
 HORINE, ELMER S., 304 S. 5th Ave.
 Howard, Richard Henry, Jr.
 (See Chicago)
 HUGHES, CHAS. WILFORD
 (See Hines)
 IGNATIUS, ARSHAVIR A.
 (See Chicago)
 JOSLYN, ARTHUR EVERETT (814 Williams St., River Forest); office, 1908 St. Charles Rd.
 Laybourne, Ethel Mae, not in practice
 —Central Baptist Children's Home

LEMING, HOWELL ELIJAH
 (See Hines)
 Little, Adolphus Lamar
 (See Hines)
 LOVEJOY, WALTER C., 1008 N. 2d Ave.; office, 23 N. 5th Ave.
 MATTER, ORSON EUGENE, 216 N. 3d Ave.
 McFADDEN, HARRY WEBER
 (See Hines)
 McNamara, Adelaide Mary Zoeller, 503 Quincy St.
 Miller, D. Evelyn, 1833 S. 2d Ave.
 Moore, Aaron, 410 St. Charles Rd.
 MURRAY, MEREDITH BYRNE, 406 Oak St.; office, 101 S. 5th Ave.
 Myers, John Wesley
 (See Hines)
 Newell, Robt. C., 1433 S. 12th Ave.
 Olson, Ernest Sivereen, 1002 S. 5th Ave.
 Perry, Jos. H., 406 S. 17th Ave.
 PETERS, JOHN, 23 N. 5th Ave.
 POOLE, LEWIS ROY
 (See Hines)
 Reed, Ernest Corydon
 (See Hines)
 REEVES, DWIGHT COLEMAN 917 S. 5th Ave.
 REYNOLDS, ROBT. LAWRENCE,
 510 N. 3d Ave.; office, 23 N. 5th Ave.
 SCOTT, WM. FRED
 (See Oak Park)
 SMITH, HAROLD EDWARD, 1446 S. 13th Ave.; office, 101 S. 5th Ave.
 Stuart, Carroll W.
 (See Chicago)
 Taylor, Geo. Gordon
 (See Chicago)
 THOMPSON-KOPPENAAL, ELIZABETH ELLEN, 2036 S. 11th Ave.
 WALLINGSFORD, WM. JEWELL,
 305 N. 4th Ave.; office (Edward Hines, Jr., Vet. Hospital, Hines)
 Weinberg, Chas. Morse, 518 S. 5th Ave.
 Wells, Thos.
 (See Hines)
 WILEY, CHAS. E., 1008 N. 2d Ave.; office, 1003 S. 17th Ave.

MELROSE PARK, 10,741, COOK
 BRUST, EDMUND GEO., 161 Broadway
 CARSTENS, ERNST HERMAN C., 161 Broadway
 Castro, Cosimo (818 S. Marshfield Ave., Chicago); office, 161 Broadway
 KIONKA, PAUL B.
 RENDTORFF, WALTER (1200 S. 4th Ave., Maywood); office, 10 Broadway
 SCOTT, WM. FRED
 (See Oak Park)
 SHOCKEY, GEO. CURTIS, 128 Broadway
 Vertuno, Louis Abbott (801 Wisconsin Ave., Oak Park); office, 1912 Lake St.

MORTON GROVE, 1,974, COOK
 Sarkissian, Sarkis Der
 (See Chicago)

MOUNT PROSPECT, 1,225, COOK
 Buck, Alfred Laffin
 KOESTER, LOUISE
 WOLFARTH, ALFRED

NILES CENTER, 5,007, COOK
 JONES, ROBT. MOORE
 (See Chicago)
 KLEHM, AMELIA LOUISE
 Line, Eva Jane
 Mussil, Julius Jos.
 SEGUIN, ARTHUR CLEMENT
 SIMONS, JAMES DANL.
 (See Highland Park)
 SINTZEL, RUDOLPH V.

NORTHBROOK, 1,193, COOK
 Benz, Henry Andrew, not in practice
 REMBE, ROLAND FRED
 Sintzel, Louis J.

OAK LAWN, 2,045, COOK
 Gasteyer, Theodore Hall
 SCHUSSLER, EDWARD G.

OAK PARK, 63,982, COOK
 Number of Physicians, 276
 Adams, Mary F., not in practice—1027 S. Highland Ave.
 ADAMS, NATHANIEL HOLDER
 (See Chicago)
 Ahlberg, Fanny M., 127 N. Oak Park Ave.
 AHSTROM, JAMES PETER
 (See Chicago)
 ALLEN, ARTHUR VINCENT
 (See Chicago)
 ANDERSON, KENNING MEREDITH
 (See Chicago)
 ANDERSON, EARVYE HARRY
 (See Chicago)
 Atkinson, Thos. Geo.
 (See Chicago)
 Barss, Jos. Ernest, 505 S. Oak Park Ave.
 BEARD, HALLARD
 (See Chicago)
 BEEBE, LESLIE W., 401 Forest Ave.; office, 715 Lake St.
 BELLIZZI, ALFREDO
 (See Chicago)
 BELZIG, FREDK. CARL
 (See Chicago)
 BERARD, HENRY WM.
 (See Chicago)
 Bergen, Marie Dorothea Gras, 816 S. Harvey Ave.
 BERGER, JOHN MILTON
 (See Chicago)
 BEVERLY, BERT IRA
 (See Chicago)
 BLOUNT, ANNA ELLSWORTH, 146 S. Oak Park Ave.
 Bolduc, Jos. O., 1119 Clarence Ave.
 Bowler, Vincent Brendan
 (See Chicago)
 BOWMAN, CURTIS BUFORD
 (See Chicago)
 BOYD, JOHN RICHARD, 12 Washington Blvd.; office, 840 S. Oak Park Ave.
 BREDLAU, ERNEST AUGUST
 (See Chicago)

- BREWER, LEWIS RAWLINGS
(See Chicago)
- BRIANZA, ARTHUR MARIO
(See Chicago)
- Brown, Oran Alfred, 644 S. Grove Ave.
- Brown, Saml. Ross
(See Hines)
- BROWN, WM. CULP
(See Chicago)
- BURROUGHS, WALLACE McMURRAY (See Chicago)
- BUSBY, JOHN AMBROSE CLARK, 839 Lake St.; office, 715 Lake St.
- BUTLER, CRAIG DUNN, 1011 N. Woodbine Ave.; office, 715 Lake St.
- BUTT, WM. JOS., 432 N. Austin Blvd.
- CAMPBELL, WM. SCOTT
(See Chicago)
- Carey, Clair Martin, 1142 Chicago Ave.
- Caron, Walter
(See Chicago)
- Carpenter, Geo. Henry
(See Chicago)
- Chandler, Simon B.
(See Chicago)
- Chauvet, Frank
(See Chicago)
- CHOUINARD, CLARENCE ROBERT
(See Chicago)
- CLARK, FLOYD MARION
(See Chicago)
- CLAYPOOL, BLAINE WILSON
(See Chicago)
- Code, Walter Austin, 427 Washington Blvd.
- COHLER, LAZARUS
(See Cicero)
- COLE, LUCIUS (1117 Lathrop Ave., River Forest); office, 715 Lake St.
- Coley, Lucius A. (E), 601 S. Taylor Ave.
- CONGER, GUY PARKE (558 Keystone Ave., River Forest); office, 120 N. Oak Park Ave.
- CONGER, SIDNEY BEESON
(See Chicago)
- CONVERSE, WALLACE COX
(See Chicago)
- COOK, CARROLL EUGENE
(See Chicago)
- Cooper, Arthur Reuben, 315 Home Ave.
- Copeland, Wm. Henry, 1033 Ontario St.
- CORBETT, MITCHELL SAM'L
(See Chicago)
- COX, JAMES FRANCIS
(See Chicago)
- CRANK, ALEXANDER C.
(See Hines)
- Croft, Albert Jos.
(See Chicago)
- Crowley, Wm. Simon
(See Chicago)
- CUTRERA, PETER
(See Chicago)
- DARO, AUGUST FIORA
(See Chicago)
- Degan, James T., 152 LeMoyne Parkway
- DICOSOLA, RALPH MICHAEL, 922 Ontario St.; office, 137 Marion St.
- DOESCHER, PAUL FREDK.
(See Chicago)
- DOOLEY, HARRY JOS.
(See Chicago)
- DORSEY, HUGH P., 715 Lake St.
- DOUGHERTY, CLIFFORD LESTER
(See Chicago)
- Dovey, Edward Grovenor
(See Hines)
- DRENNAN, FRED MILLER
(See Chicago)
- DRURY, RAY C.
(See Chicago)
- DVORAK-THOBALD, GEORGIANA M., 839 Lake St.; office, 715 Lake St.
- Edmunds, Clarence Harold, 216 S. Austin Blvd.
- EGAN, EDWARD MICHAEL
(See Chicago)
- Egan, Wm. Bernard, LeMoyne Parkway
- Ehlers, Fredk. Ferdinand, 116 N. Kenilworth Ave.
- EHRMANN, EVELINA WILHELMINA (See Chicago)
- FALETTI, ANTHONY JOHN, 1145 Madison St.
- FANTUS, BERNARD
(See Chicago)
- FARINA, JOS. J.
(See Chicago)
- FISHER, BERTHA GAE, 416 N. Austin Blvd.
- FISK, WM. BURNHAM, 175 Linden Ave.
- FITZGERALD, JAMES MERLIN
(See Chicago)
- FOTY, SAVIOUR R., 920 S. Austin Blvd.
- FOWLER, EARLE BLOODGOOD
(See Chicago)
- FOX, NICHOLAS ISRAEL
(See Chicago)
- FOX, PAUL CHRISTOPHER, 5 Elizabeth Ct.; office, 715 Lake St.
- Franklin, Chas. Edward (501 N. Central Ave.; Chicago); office, 715 Lake St.
- FRENCH, ROBT. LOYAL, 411 N. Scoville Ave.; office, 715 Lake St.
- FUNKHOUSER, OSCAR BRUNK
(See Chicago)
- Gallagher, Michael Leo
(See Hines)
- Gawne, Chas. Bernard, 3 Madison St.
- GESSING, JAMES ANDERSON, 321 N. Elmwood Ave.
- GOEBEL, RUSSELL WALTER (1134 N. Harlem Ave., River Forest); office, 1011 W. Lake St.
- GOLDEN, HAROLD MILLER
(See Chicago)
- Good, Palmer Wagstaff
(See Chicago)
- GOOD, ROBERT HOSEA
(See Chicago)
- Gordon, Lourdes Bernard, West Suburban Hospital
- GRAVES, NATHANIEL A.
(See Chicago)
- GRAVES, PHILIP ABERNETHY, 129 Clinton Ave.; office, 1011 Lake St.
- GRAY, WM. KARG
(See Chicago)
- Green, Geo. Noel
(See Chicago)
- GRISSOM, RAYMOND FRANCIS (347 Keystone Ave., River Forest); office, 715 Lake St.
- GROTH, WM. F.
(See Chicago)
- HADDEN, SHIRLEY LOUIS
(See Chicago)
- HAEFFNER, ALBERT WM.
(See Chicago)
- HALEY, CLARENCE OTTO
(See Chicago)
- HALL, ALICE KASSIE
(See Chicago)
- HARGER, JOHN ROSS
(See Chicago)
- Harker, M. P. Lyla, 1202 Woodbine Ave.
- Harper, Mary McKibbin, not in practice—1041 Pleasant St.
- HARWOOD, ROBT. SAML., 831 S. Kenilworth Ave.; office, 831 S. Oak Park Ave.
- HAWKINS, JOHN RUSKIN, 635 N. Elmwood Ave.; office, 715 Lake St.
- HAWKINSON, OSCAR
(See Chicago)
- HAYES, DANL. FRANCIS
(See Chicago)
- Hayward, Martha, not in practice—320 S. Maple Ave.
- Heald, John Orland, West Suburban Hospital
- Hemphill, Robt. Begg, 429 N. Marion St.
- Hill, Lewis Rowland
(See Chicago)
- Hill, Harold Herrin, 1011 Lake St.
- Hocksema, Henry, West Suburban Hospital.
- HOFFMAN, COLEMAN L., 53 Washington Blvd.
- HOLDEN, DAVID
(See Chicago)
- HOLMES, EDWARD M.
(See Chicago)
- HOUSTON, JAMES ALEXANDER
(See Chicago)
- HOWSER, REID OWEN, 304 N. Lombard Ave.; office, 715 Lake St.
- HULBERT, HAROLD STACEY
(See Chicago)
- JACK, JOHN BARNES
(See Chicago)
- JAMES, WM. ALFRED
(See Chicago)
- JIRSA, OTTO JOHN
(See Chicago)
- JOHNSON, SILAS CURTIS
(See Chicago)
- JONES, CARL FISKE
(See Chicago)
- JONES, EARNEST EUGENE, 1141 Edmer Ave.; office, 1011 Lake St.
- JONES, MARTIN D., 647 N. Euclid Ave.; office, 715 Lake St.
- Jones, Morris Hunter, Jr., 1 Chicago Ave.
- KAPLAN, DAVID, 340 S. Maple Ave.; office, Vet. Bureau, Hines
- KENDALL, WM. EUGENE, 228 S. Ridgeland Ave.
- Kergerreis, Roy, 311 N. Oak Park Ave.
- KERR, ELLIS KIRK, 820 N. Oak Park Ave.; office, 715 Lake St.
- KETTLESTRINGS, FRED WILLIS, (Glen Ellyn); office, 715 Lake St.
- Kidd, Wm. Edwin, 326 S. Oak Park Ave.

Kingsley, Danl. Milton, 1142 S. Kenilworth Ave.
 KOUCKL, JOHN DOUGLAS
 (See Chicago)
 KRAFT, JACOB CARL
 (See Chicago)
 KRASA, JOHN CHAS. MATTHEW
 (See Chicago)
 LAMPERT, MAX THALER
 (See Chicago)
 Larkin, O. Eugene, retired, 1000 Clinton Ave.
 Latimer, Milton Jay
 (See Chicago)
 LAWRENCE, WALTER A.
 (See Berwyn)
 LEAF, HUGH MACK
 (See Chicago)
 LE BOY, WM. LEWIS
 (See Chicago)
 LESSING, ALBERT, not in practice—179 N. Ridgeland Ave.
 LINDEN, GABRIEL ERIC, 405 N. Taylor St.; office, 715 Lake St.
 Linder, Anny Werner, Masonic Temple.
 LOOMIS, EDW. BEACH, 333 Wisconsin Ave.
 Luff, Emily M., 1023 Chicago Ave.
 Lundgren, August E.
 (See Chicago)
 MAC DEARMID, LESILE FREDK.
 (See Chicago)
 Mach, Geo. F., 1040 S. East Ave.
 Mann, Sigmund
 (See Cicero)
 Marcussou, Wm. Beringer, 333 S. Taylor Ave.
 MARCUSSON, WM. BERINGER, JR., 300 N. Grove Ave.; office, 19 W. Madison St.
 McCann, Neal Jos., 1174½ S. Oak Park Ave.
 MCCOLLUM, JAMES LESLIE, 137 S. Harvey Ave.
 McCONNELL, JOHN W.
 (See Chicago)
 McDAVID, JOHN SOLOMON, 919 N. Marion St.; office, 715 Lake St.
 McDOWELL, WM. D.
 (See Chicago)
 McElvenny, Robt. Talbot, West Suburban Hospital
 MoLALLEN, ROBT. ROY, 210 N. Taylor Ave.; office, 715 Lake St.
 McMillan, John Chas., Jr., 1011 Lake St.
 MEACHAM, HUBERT FRANKLIN
 (See Chicago)
 Meacham, Wm. Chas.
 (See Chicago)
 Meyer, Anna K., 101 N. Oak Park Ave.
 Mix, Harry Collier, 524 S. Wisconsin Ave.
 MIZE, HARLAN EDGAR
 (See Hines)
 MONACO, ATTILIO
 (See Chicago)
 Morrow, Alvin Reid
 (See Chicago)
 MOTIS, MARIE A. ZADEK, 6120 W. Roosevelt Rd.
 MOTTER, THOS. IRA, 231 N. Kenilworth Ave.; office, 715 Lake St.
 Movius, Alfred Henry, Jr.

MUELLER, GEO. ERNST, 115 S. Maple Ave.; office, 1011 Lake St.
 NEEDHAM, FRANK STEWART, 332 Wisconsin Ave.; office, 124 Wisconsin Ave.
 NELSON, OLE C.
 (See Chicago)
 NERGER, VERNON DURWARD
 (See Chicago)
 Newkirk, Wm. Henry, West Suburban Hospital
 NICOLL, HOMER KING
 (See Chicago)
 Noel, Jos. R., not in practice—406 N. Linden Ave.
 Nolan, John J.
 (See Chicago)
 NORDHOLZ, WM. C.
 (See Chicago)
 NORTELL, JOS. LAWRENCE
 (See Chicago)
 OBERHELMAN, HARRY ALVIN
 (See Chicago)
 O'Brien, James Anthony
 (See Clarendon Hills)
 OCHS, ARTHUR JOHN, 300 S. Maple Ave.; office, 809 Madison St.
 OCHS, CLARA MARY, 300 S. Maple Ave.; office, 809 Madison St.
 OCHS, MILTON MARQUETTE, 300 Maple Ave.; office (7300 Madison St., Forest Park)
 O'Herrin, Neil Lawrence, 1043 Wenonah Ave.
 OLDFIELD, RALEIGH CHAS. (539 Jackson Ave., River Forest); office, 715 Lake St.
 OLENTINE, FRED BLUE, 12 S. Austin Blvd.
 OLIVER, PAUL (737 Keystone Ave., River Forest); office, 715 Lake St.
 Padnos, Emanuel
 (See Chicago)
 Palmer, Mahlon Phelps, 418 N. Austin Blvd.
 PARMELEE, ARTHUR HAWLEY, (611 Edgewood Pl., River Forest); office, 715 Lake St.
 Passarella, Frank Anthony, Jr.
 (See Chicago)
 PAVLIK, OTTO STEVE
 (See Chicago)
 Person, Edward John, 6646 W. Roosevelt Rd.
 Pierce, Wilnot Frank, 1 Elizabeth Ct.; office, 715 Lake St.
 Piette, Eugene Constantine, 426 N. Taylor Ave.; office, 518 N. Austin Ave.
 POND, GILBERT PALMER
 (See Chicago)
 POORMAN, CHAS. WALLACE, 424 N. Oak Park Ave.; office, 715 Lake St.
 POTTER, WARD ELVERTON, 503 N. Grove Ave.; office, 715 Lake St.
 POTTS, WILLIS JOHN, 715 Lake St.
 Propeck, Jos. W. (E), 851 Columbian Ave.
 PROBST, DUANE WILLARD
 (See Chicago)
 QUIGLEY, WM. JOSEPH
 (See Chicago)
 RAYCROFT, WM. BERNARD
 (See Chicago)
 RENDER, CARL DAVIS, 120 Clinton Ave.; office, 715 Lake St.

RIBBECK, WM. AUGUSTUS
 (See Chicago)
 RIORDAN, HOWARD CHAS., 505 S. Oak Park Ave.
 RIVER, LOUIS PHILIP, JR., 604 S. Clarence Ave.; office, 715 Lake St.
 ROBERTS, BENJ. TITUS, not in practice—1036 Randolph St.
 ROBERTS, RENO RAY
 (See Chicago)
 ROBERTS, THOS. ELMER, 320 N. Euclid Ave.; office, 715 Lake St.
 Ronayne, Frank Joseph, West Suburban Hospital
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 ROTH, JAMES HENRY
 (See Chicago)
 SAVAGE, ROBT. GARFIELD (745 Jackson Ave., River Forest); office, 505 S. Oak Park Ave.
 SAWYER, ALVAH LEWIS
 (See Chicago)
 SCHROEDER, PAUL LEWIS
 (See Chicago)
 Schuetler, Arthur Fredk., 811 N. Harlem Ave.
 SCOTT, WM. FRED (200 18th Ave., Maywood); offices, 124 Wisconsin Ave. and (9 Broadway, Melrose Park)
 SEMERAK, JOS.
 (See Chicago)
 SHEAFF, HOWARD MARTIN, 827 N. East Ave.; office, 715 Lake St.
 Shipman, Frank Edmund, 350 Harrison St.
 SILER, CHAS. ARTHUR, 715 Lake St.
 Siler, Marion Louise Pierce, 524 Forest Ave.
 SIMA, CHAS. ARTHUR
 (See Chicago)
 Simmonds, Walter Edward, 1040 North Blvd.
 Simmons, Howard L.
 (See Chicago)
 SKILES, JAMES HUBERT, 730 Fair Oaks Ave.; office, 715 Lake St.
 Smith, Chas. Otis, 747 Clarence Ave.; office, 1011 Lake St.
 SMITH, FRANK LEROY
 (See Chicago)
 SMITH, HERSCHEL I.
 (See Chicago)
 SOLEM, GEO. OLIVER
 (See Chicago)
 SPIESMAN, IRWIN GABRIEL, 715 Lake St.
 SPRAKKA, JOHN JOSEPH
 (See Chicago)
 STEPHENS, HARRY HART
 (See Chicago)
 Sterba, Jos. V., 631 Clarence Ave.; office (3201 Ridgeland Ave., Berwyn)
 STEWART, HARRY JOHN, 223 N. Euclid Ave.; office, 715 Lake St.
 STORKE, ALBERT FRENCH
 (See Chicago)
 SUMMERS, ANTHONY, W., 910 S. Austin Blvd.
 SUMMERVILLE, MILTON JOS., 1039 Pleasant St.; office, 137 Marion St.
 SWANTZ, HENRY EUGENE, 423 Forest Ave.; office, 715 Lake St.

SYLVESTER, FRANK MOREAU,
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THEOBALD, JOHN JOS.
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TOPE, JOHN WESLEY, 925 Lake St.; office, 715 Lake St.

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(See Chicago)

VALENTINE, JAMES ANDRES
(See Chicago)

VAN VERST PAUL HERBERT, 1110 Pleasant St.; office, 715 Lake St.

Vertuno, Louis Abbott
(See Melrose Park)

VOLINI, ITALO FREDK.
(See Chicago)

VON DER HEYDT, ROBT.
(See Chicago)

WALDO, PROCTOR COOK, 807 Fair Oaks Ave.; office, 715 Lake St.

WALL, CHAS. DELAMERE
(See Chicago)

WALLACE, JAMES HOUSTON, 732 N. Kenilworth Ave.; office, 715 Lake St.

WALSH, THOS. GERVASE
(See Chicago)

WALTON, BERNARD CLAIBORNE, 627 N. Ridgeland Ave.

WANDERER, ARTHUR EMIL AUGUST
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WARFIELD, CHESTER H.
(See Chicago)

WATERMAN, WALLACE M.
(See Chicago)

Webb, Arthur Sterling
(See Warrenville)

West, Albert M.
(See Chicago)

Westerdahl, Arvid Emanuel, 1 Chicago Ave.

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WHEELER, ALONZO M.
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Zuley, Lawrence Edward, 101 S. Oak Park Ave.

ORLAND PARK, 571, COOK
SCIUSSLER, WALTER RICHARD
(See Chicago)

PALATINE, 2,118, COOK
Clayton, James A. Garfield
Renner, John J.
Schirding, Wm. P.

SCHMIDTKE, JOHN CALVIN
Starck, Carl Adam
(See Chicago)

PALOS PARK, 456, COOK
AVERY, FREDK. T.
McQUARRIE, JOHN K.
(See Chicago)

PORTER, ROBERT HENRY, Jr.
(See Chicago)

PARK RIDGE, 10,417, COOK
Blank, Ernest C., 725 N. Washington St.
Caveney, Martin Wm.
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CONLEY, HENRY HAROLD, 306 Cuttress Pl.; office, 3 S. Prospect Ave.

CONLEY, THOS. EDWARD, 404 Ashland Ave.; office, 3 S. Prospect Ave.

DROSTENFELS, ROMAN W., 100 Wisner Ave.

Fricke, Fredk. H.

FRIEND, WM. MARSHALL, 218 Courtland Ave.

GAMBLE, RICHARD COTTER
(See Chicago)

HODES, JACOB ELLIS
(See Chicago)

Mikkelsen, Niels Victor
(See Chicago)

Murtaugh, James Emmett, 6 Touhy Ave.

Ohlendorf, Wm. Chas., retired; 431 Stewart Ave.

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Riser, Roy Otis

SARGENT, BENJ. LEROY
Scott, Douglas Geo., 51½ Summit Ave.; office, 100 S. Prospect Ave.

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Stevens, Karl Ivan
(See Chicago)

Wallace, Walter S.

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AMBERSON, JULIUS MARTIN
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Baumrucker, Otto, not in practice—947 William St.

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(See Chicago)

COLE, LUCIUS
(See Oak Park)

CONGER, GUY PARKE
(See Oak Park)

CRONIN, JOHN JAMES
(See Chicago)

CURL, GEO. RUSSELL
(See Chicago)

DAVISON, CHAS.
(See Chicago)

Davison, Chas. Marshall
(See Chicago)

EVANS, JOHN HENRY
(See Chicago)

FALLS, FREDK. HOWARD
(See Chicago)

GOEBEL, RUSSELL WALTER
(See Oak Park)

GOOD, ROBT. HOSEA
(See Chicago)

GRIFFITH, CHAS. ALLEN, 503 Forest Ave.; office, 7803 Lake St.

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JACOBS, EUGENE CORYELL, 827 Forest Ave.

JENKINS, HILDER ENNO
(See Forest Park)

JONES, CARL FISKE
(See Chicago)

JOSLYN, ARTHUR EVERETT
(See Maywood)

KNOX, WM. BALMER
(See Forest Park)

LANG, JOHN MICHAEL
(See Chicago)

Lyon, John Bates

McNEIL, ALBERT GORDON
(See Forest Park)

OLDFIELD, RALEIGH CHAS.
(See Oak Park)

OLIVER, PAUL
(See Oak Park)

PAGANO, RALPH
(See Chicago)

PARMELEE, ARTHUR HAWLEY
(See Oak Park)

PHELPS, LUCIUS BELDING
(See Chicago)

POST, GEO. WASHINGTON, Jr.
(See Chicago)

ROSE, CAMERON ALFRED
(See Oak Park)

SAVAGE, ROBT. GARFIELD
(See Oak Park)

SCHAAARE, WM. F.
(See Chicago)

SCHROEDER, GEO. HENRY
(See Chicago)

SCHULTZ, LOUIS
(See Chicago)

SCHULTZ, LOUIS WM.
(See Chicago)

SELBY, FREDK. S.
(See Chicago)

SIMMONDS, WALTER EDWARD
(See Chicago)

SODARO, JOS. CLARENCE
(See Forest Park)

TIMBLIN, WM. STANLEY
(See Chicago)

WARDEN, RALPH HERBERT
(See Chicago)

WAY, HENRY JOS.
(See Chicago)

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ZELENY-BAUMRUCKER, OTILLIE
(See Cicero)

RIVER GROVE, 2,741, COOK
KIRLIN, DENNIS JOS.
(See Chicago)

RIVERSIDE, 6,670, COOK

BARNETT, GEO. ALVIN
BARTIZAL, JOHN FRANK
(See Cicero)

Becht, Frank Christian
(See Berwyn)

Becker, Louis Dunsten
(See Berwyn)

BISHOP, ADOLPH EDWARD
(See Berwyn)

BOUSA, BOHUSLAV
(See Chicago)

CARR, EDSON WORTH
(See Chicago)

DAVIES, LEORA ENSIGN
(See Chicago)

FANNING, DAVID JAMES
(See Chicago)

Forbrich, Jos. Andrew

FULLER, SPENCER SAM

GUNNAR, HERMAN PETRUS
(See Chicago)

HIENSSLER, OTTO W.
(See Chicago)

HOUGHTON, WALDO JEROME
(See Cicero)

Jansey, Felix Malcom
(See Chicago)

JAROS, JOS. FRANCIS
(See Chicago)

JONES, HARRY MATTHEW
(See Chicago)

MACKOWIAK, FELIX A.
(See Chicago)

McLallen, James Claude
(See Cicero)

NOVAK, FRANK JOHN, Sr.
(See Chicago)

OSTROWSKI, FLORIAN GEO., 273
Blackhawk Rd.

Ramsay, Blaine Lowell
(See Chicago)

RIDER, DEAN LOLLER

Rider, Jeannette Leszczynski

RUSSELL, EDWIN PHILLIPS
(See Berwyn)

SAZAMA, JOHN JOS.
(See Berwyn)

Shimberg, Mandell

SMITH, JOHN COLVILLE
(See Cicero)

VYNALEK, WM. JOHN
(See Berwyn)

WILLIAMS, WM. ROBT.

SOUTH HOLLAND, 1,873, COOK

WALVOORD, GERRIT WM.

STEGER, 2,985, WILL

Moore, Mary Thair Courtney Brown
Wickensimer, John B.

STICKNEY (ARGO P. O.), 2,005, COOK

DRUNASKY, HARFORD LEON
(See Chicago)

THORNTON, 1,012, COOK

OLIVER, NELSON EUGENE

TINLEY PARK, 23, COOK

CARMICHAEL, ROBT. HENRY

VAN WORMER, WELLINGTON
CLARENCE
(See Homewood)

WESTERN SPRINGS, 3,89, COOK

GERTY, FRANCIS JOS.
(See Chicago)

Hansen, Stephen John

HOSPERS, ANTHONY JOHN
(See LaGrange)

NAUMAN, RALPH WALDO

ROWELL, LAWRENCE W.
(See Chicago)

Taylor, Amelia Lucia W.

WHEELING, 467, COOK

LARSON, EDWARD L.

WILMETTE, 15,233, COOK

AXELSON, JOHN M.

(See Chicago)

Bagdadi, Zia Mahsut

(See Chicago)

BARKER, MILTON REED, 730 Cen-
tral Ave.

BAUTH, CARL OTTO
(See Chicago)

Beecher, Saml. E.

(See Chicago)

BERTLING, ADOLPHUS EDMUND
(See Chicago)

BROWER, DANL. ROBERTS
(See Chicago)

COLWELL, NATHAN PORTER, 520
Gregory Ave.

CONLEY, BERNARD MONTROSE,
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Conley, Minnie Agnes Hinch

CRILE, DENNIS RIDER WOOD
(See Chicago)

Cummiskey, Edward F.
(See Chicago)

Cunningham, Danl. Robt.

(See Chicago)

DAVIS, DAVID JOHN
(See Chicago)

deBERE, CLEMENT JOS.
(See Chicago)

EARLE, FRANK BRECKENRIDGE
(See Chicago)

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TA WEIL, 1006 Seneca Rd.; office,
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HECKT, MANNIE CHAS., 1042
Greenwood Ave.; office, 1159 Wil-
mette Ave.

HAWKINS, WINFRED WEEDEN,
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mette Ave.

HENDERSON, ROBT. HOUSTON
(See Chicago)

HESS, EDWARD FREDK.
(See Chicago)

HODGES, HAZEL ADELLE WELL-
MAN, 901 Forest Ave.

Kampmeier, Otto Fred.
(See Chicago)

KARST, FREDK. AUGUST
(See Chicago)

MacChesney, Wm. Nelson, 111 Lin-
den Ave.

MAHLE, ARTHUR EDWIN
(See Chicago)

MANN, WM. ALFRED, SR.
(See Chicago)

MANN, WM. ALFRED, JR.
(See Chicago)

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McKENNEY, ROSANNA NORBE-
TINE
(See Winnetka)

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nut Ave.; office, 1165 Wilmette Ave.
Merrifield, Katharine Brooks, 1014 Elm-
wood Ave.

Mitchell, Bryan Lee, 360 Gregory Ave.;
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MOORE, EDWARD E., 1203 Ashland
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NUZUM, JOHN WESTON
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PERRY, SOLOMON PAUL, 1609
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RICHTER, HARRY ALLEN
(See Evanston)

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SMITH, CHAS. GEO., 1325 Green-
wood Ave.; office, 1159 Wilmette
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SNORF, LOWELL DELFORD
(See Chicago)

SNYDER, M. VERNON
(See Chicago)

STANTON, SAML. CECIL, not in
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STOLP, RUFUS B. (Kenilworth); of-
fice, 1159 Wilmette Ave.

SYNDACKER, EMANUEL T.
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THOMAS, EARLE H.
(See Chicago)

WAUGH, JOHN FRANKLIN
(See Chicago)

WEAVER, GEO. HOWITT
(See Chicago)

WEGNER, EDWIN ALBERT
(See Chicago)

WEISHAAR, HERMAN OLIVER,
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mette Ave.

WESCOTT, VIRGIL
(See Chicago)

WINNETKA, 12,166, COOK

ALDRICH, CHAS. ANDERSON, 1189
Oakley Ave.; office, 723 Elm St.

Andrews, Frank Taylor, retired—93
Indian Hill Rd.

ASHBY, JOHN SHERMAN
(See Chicago)

BELLENGER, HOWARD CHAS.
(See Chicago)

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St.

BLATCHFORD, FRANK WICKES,
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St.

Bradwell, James Barton (H), 1415
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BRENNEMANN, JOS.
(See Chicago)

BROWN, EDWARD VAIL LAPHAM
(See Chicago)

BROWN, RALPH CRISSMAN
(See Chicago)

CARNCROSS, HELEN
(See Chicago)

CLARK, ELBERT
(See Evanston)

CROWDER, THOS. REID
(See Chicago)

CUMMINGS, WM. GROSVENOR,
1097 Merrill St.; office, 723 Elm St.
FITZGERALD, DAVID HENRY
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GARNER, JAY MCKINLEY, 804
Prospect Ave.; office, 723 Elm St.
Garner, Katherine Rogers, not in practice—804 Prospect Ave.

GORMLEY, JOHN HARRY
(See Glencoe)

GREELEY, PAUL WEBB, 545 Lincoln Ave.

GUNN, FRANCIS DOWDEN
(See Chicago)

HAMILL, RALPH C.
(See Chicago)

Honnold, Fred Clifton, not in practice
—457 Ash St.

JACKSON, HARRY
(See Chicago)

JACOBS, CHAS. MAYO
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Kemper, Malcolm A.
(See Chicago)

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MACKENZIE, HENRY WALLACE
DUNDAS
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Markley, Lloyd Merrill, North Shore Health Resort

Massman, Valentine, 922 Pine St.

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NADLER, WALTER HERMAN
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OLIVER, EDWARD ALLEN
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PETERS, FRANK ELLSWORTH, 458 Winnetka Ave.

RAMSER, HAROLD ALFRED
(See Chicago)

Robertson, Helen Evans, 334 Fairview Ave.

SAUER, LOUIS WENDLIN
(See Evanston)

SCHACHT, FREDK. WM.
(See Chicago)

SCHIPFER, LLYOD ALBERT
(See Chicago)

SCHNEIDER, CARL OSCAR
(See Chicago)

SENEAR, FRANCIS EUGENE
(See Chicago)

STARR, MERRITT PAUL
(See Chicago)

TAYLOR, LILLIAN ETHEL
(See Chicago)

Trowbridge, Edward G.
(See Chicago)

True, Katherine Knight, 418 Forest St.; office, 833 Elm St.

Wales, Albert H., 896 Linden Ave.; office, 522 Center St.

Zeit, Fredk. Robt.
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AUXILIARY NOTES

Reading "The Duties and Responsibilities of the State Organization Chairman" compiled in our handbook I found this important suggestion "To stimulate organization the chairman must understand the purpose of the Auxiliary," and may I add not only understand the purpose but try to carry the message of the purpose and importance of the Auxiliary to each and every Doctor's wife.

To us, the Doctors' wives, the Auxiliary should not be just another organization but should be the background for all our club and public activities, "reaching out into every phase of organization work." Our President of the Illinois State Medical Society said in a letter to the Auxiliary: "The public has become health-minded, eager for information concerning all health matters. The Woman's Auxiliary finds here an important function. The Doctor's wife should be able to take her place in all groups dealing with health and welfare work and educate herself so as to guide the plans of these organizations."

The Auxiliary has programs of various activities. Perhaps in one county the legislative work will appeal; in another, the social contacts will seem of more importance. Again, the welfare work, such as assisting in conducting and carrying on the clinics for handicapped children, aiding the Society for the Prevention of Blindness and many other projects will interest the members. Our State Society, through its Scientific and Educational Service, is doing such splendid work throughout the state along these lines, and the public is responding. This is certainly a definite place for the Auxiliary to carry on with the Doctor. The Public Relations program offers a wide field and the Chairman has opened the year's work with a splendidly successful meeting. In the larger cities the study of the economic problems, especially the evils of state medicine

and of unauthorized free clinics, will be of interest. All of these matters are worthy of effort and the question "What shall we do with an Auxiliary in our county?" is answered again and again.

Each county is an important part of the Auxiliary. Each group, carrying on, increases the value and efficiency of the whole unit. The county Auxiliary may be organized to suit its needs. It is not necessary to have a complicated organization, and in many districts it may be wise to combine several counties in one unit. If we have had a part in organizing our county, we have done a splendid thing for organized medicine.

The Auxiliary is proving itself a liaison between the medical profession and the public. The importance of this connection will be appreciated by the Doctor if he knows that he has an efficient and educated ally in the Auxiliary member who, guided by the Advisory Board of the Medical Society, takes her place in organization work. The efficiency of our own officers will be greatly increased if they assume their positions secure in the thought that a large group, well organized and efficient, is back of them, capable and willing to carry on their plans for each year. This is your work, our work, and we ask your whole-hearted cooperation. Our Organization Committee, composed of a Chairman and the Councilors from the various districts, has outlined an ambitious program for the year, the success of which lies entirely with all the members. The cooperation of every Doctor's wife is necessary. We ask your help in contacting every Doctor's wife, and we feel sure that she will feel an obligation to join the list of informed women interested in the problems of the Doctor and of organized medicine.

VERA M. KREUSCHER,
MRS. PHILIP H. KREUSCHER,
Chairman of Organization.

Board Meeting. The next meeting of the Board of the Woman's Auxiliary to the Illinois State Medical Society will be held on Saturday, November 18 at 10:00 A. M. at the Stevens Hotel, Chicago. All members of the Board are urged to attend this business meeting.

Dr. Read's Lecture. According to the announcement in the October number of the JOURNAL the first public meeting, sponsored by the Woman's Auxiliary to the Illinois State Medical Society and the Woman's Auxiliary to the Chicago Medical Society was held in the auditorium of the Illinois Host House, A Century of Progress on October 11. Much interest was shown in this meeting. Dr. Charles F. Read, Managing Officer, Elgin State Hospital was the speaker. Dr. Read's address, "Mental Health in the Home" appears in this issue of the JOURNAL.

Following the lecture a luncheon was held in the Trustees Lounge, the Hall of Science. On this occasion it was a great pleasure to the physicians' wives in Chicago to welcome many distinguished guests from out of the city.

Cook County Notes. The first meeting of the Woman's Auxiliary to the Chicago Medical Society was held on Wednesday, October 4, in the Medical and Dental Arts Club, Chicago. The speakers were Dr. Austin A. Hayden, President of the Chicago Medical Society; Dr. Philip H. Kreuscher, President of the Illinois State Medical Society and Dr. M. T. Maceachern, Director of Hospital Service American College of Surgeons who showed "Good Hospital Care," a motion picture with sound.

At the luncheon, preceding the program, Mrs. Eben J. Carey, President of the Wisconsin State Auxiliary, was the guest of honor and extended greetings from our sister state.

St. Clair County Auxiliary. A review of the magazine, "Hygeia," was given at the October 8 meeting of the St. Clair County Medical Society Auxiliary, held in St. Mary's Hospital auditorium, East St. Louis. Articles were reviewed by Mrs. R. F. Stanton, Mrs. Harvey S. Smith and Mrs. H. H. Hurd. Mrs. I. L. Foulon, the new president, presided. The program was in charge of Mrs. H. H. Hurd, county and state chairman of "Hygeia." As a feature of the evening, Mrs. Karl Schatz gave several vocal selections accompanied by her daughter. Following their meeting, members of the Medical Society joined the auxiliary members.

Vermilion County Auxiliary. The Vermilion County Medical Society entertained at an out-of-door picnic supper Tuesday evening, October 3, in the gardens at the home of Dr. and Mrs. E. G. C. Williams. It was in the nature of a Hallowe'en party. A program of unique games were played following the serving of supper. The committee on arrangements and entertainment for the party included Mrs. E. G. C. Williams, Mrs. George Potter, Mrs. C. L. Bennett, Mrs. J. Gar-

litz, Mrs. E. B. Jewell, Mrs. D. C. Good and Mrs. D. P. Caldwell.

FILMS FOR MEDICAL MEETINGS

Mead Johnson & Company through its Chicago office, 308 West Washington Street, will be glad to arrange to show the following 16 mm. films to medical societies, medical students, hospital groups, etc. No charge is made for this service which includes a projector, screen and an attendant.

GROUP ONE

1. Cod Liver Oil
2. Activities in the Mead Johnson Research Laboratory (8 reels):
 - A. Vitamin Assay Technique—Laboratory and Purification of Diet.
 - B. Vitamin Assay Technique—Vitamins A, B and C.
 - C. Vitamin Assay Technique—Assay of Ergosterol and Vitamin D.
 - D. The Chemical Laboratory, Mead Johnson & Company.
 - E. A Study in Mineralization.
 - F. Manufacture of Ergosterol and Vitamin D.
 - G. Sanitary Control of Dextri-Maltose Manufacture (2 reels).
3. Preparation of the Formula.
4. Differential Diagnosis of Vomiting in Children (2 reels).

GROUP TWO

1. Breast Feeding.
2. Breech Extraction (2 reels).
3. Restoration of Function in Cases of Harelip and Cleft Palate.
4. Miscellaneous Pediatric Cases.
5. Pediatric Nursing Technique.
6. Physical Examination of the Infant.
7. Some Diagnostic and Therapeutic Procedures.
8. Pediatric Anomalies.

GROUP THREE

1. Cervical Rib.
2. Elbow Surgery.
3. Experimental Studies in Blood Coagulation (2 reels)—including tonsillectomy, adenoidectomy, episiotomy and circumcision.
4. Gall Bladder (2 reels).
5. Gastric Ulcer.
6. Goiter Surgery.
7. Hysterectomy (2 reels).
8. Knee Surgery.
9. Bone Grafting in the Lumbosacral Spine.
10. Bone Grafting in the Lumbar Spine.
11. Plastic Surgery (2 reels).
12. Breast Surgery (2 reels).

Four more films are available on Perineorrhaphy showing spontaneous breech delivery and occiput posterior, the secondary laceration.

EDUCATIONAL COMMITTEE

October, 1933

SPEAKERS' BUREAU

7,165—People heard talks given by 46 physicians scheduled through the Educational Committee. These appointments represented such groups as district meetings of women's clubs, Century of Progress, Farmers Institutes, Women's Clubs, Teachers Institutes, College Clubs, Parent Teacher Associations, Rotary Clubs, Mothers' Clubs, High School assemblies, Colleges, Nurses Associations.

PRESS SERVICE

- 949—Releases to Illinois newspapers.
- 480—Regular press service.
- 21—Monthly service to newspapers.
- 97—Southern Illinois papers announcing postgraduate course in Pediatrics at Benton.
- 55—Newspapers, re meeting Fulton County Medical Society.
- 118—Newspapers, re meeting La Salle County Medical Society.
- 48—Newspapers, announcing clinic for handicapped children, sponsored by Whiteside County Medical Society.
- 130—Southern Illinois newspapers concerning Annual Meeting of the Southern Illinois Medical Association.
- 14—Press articles written on the following subjects:
Lunch at School.
Nephritis.
A Few Causes of Common Abdominal Complaints.
Care for the Expectant Mother.
Deafness—Its Prevention in Children.
Mouth Hygiene.
Misconceptions Regarding Childbirth.
Escaping Responsibilities.
Diphtheria Going Downhill.
Some of the Things We Know About Cross Eyes.
Importance of Vitamins in the Diet.
Caring for the Ears.
What Kind of a Sore Throat.
The Discovery of Oxygen.

SCIENTIFIC SERVICE

- 1—Clinic for Physically Handicapped Children—Whiteside County.
- 1—Postgraduate course in Pediatrics at Benton with the following physicians participating in the program: J. C. Vonachen of Peoria, Mark Jampolis, J. C. Krafft, Henry E. Irish, Robert A. Black and H. W. Elghammer of Chicago.
- 14—Scientific papers presented:
Peoria City—John A. Wolfer—"Surgical Management of the Jaundiced Patient."
Will-Grundy—Clement L. Martin, Wilber E. Post, George deTarnowsky, William R. Cubbins.
Englewood Hospital—Aaron Arkin—"Carcinoma of the Lung."
American Public Health Association—R. R. Ferguson—"Medical Leadership in Health Work."

Champaign—James H. Hutton—"The Endocrines."
Calumet Branch—George deTarnowsky—"Differential Diagnosis of Acute Abdominal Affections."
Whiteside County—Philip Kreuscher—"Treatment of Foot Deformities."

LaSalle—Nelson M. Percy, David S. Beilin.

Ogle—Thomas B. Knox—"Medical Economics."

Alexander—Frank Smithies—"Chronic Indigestion."

MISCELLANEOUS

- 18—Package libraries sent to physicians of Illinois and Iowa.
- Moving picture films secured for schools and hospitals.
- 93—Letters sent out for the Veteran's Service Committee.
- 350—Cards and invitations mimeographed for the Woman's Auxiliary.
- 150—Cards mimeographed for the Medical Women.
- 373—Notices mimeographed for LaSalle County Medical Society.
- 32—Invitations mimeographed and sent out for the Randolph County Medical Society.
- 514—Invitations sent to physicians of southern Illinois to attend the Postgraduate course in pediatrics at Benton.

RADIO PROGRAMS

- 20—Radio health talks given from stations WJJD, WGN and WAAF.

JEAN McARTHUR, *Secretary*.

OPERATION FOR SLIPPING PATELLA

Soutter outlines an operation for slipping patella in which, after the position for the supporting fascial ligament is selected, an incision is made above or below this line so that a flap may be turned back down to the fascia. The patella is tunneled obliquely from above downward and from without mesially. At about the middle of this tunnel a window is opened in the top. A similar tunnel is made in the tibia in approximately the same line and well to the mesial side of the tibia. Through the ridge of bone that overlies the fascia on the mesial side of the tibia a tunnel is made with an osteotome instead of drilling. While the osteotome is in place in the tunnel, a window is cut down to it through the overlying fascia. The ligament in the patella is passed from the mesial side of the tunnel upward and the loose end, as it emerges from the outer side of the patella, is folded over the top of the patella and tucked in through the window, emerging below at the entrance to the tunnel on the mesial side of the patella. Two catgut sutures are placed in the fascia. In a similar way the fascial ligament is tucked in on the outer side of the tibial tunnel. The loose end is then brought out at the mesial side of the tibia, folded over and tucked in through the window. The two loose ends are approximated, passed through each other twice and sutured with catgut.

Original Articles

CHOLECYSTELECTROCOAGULECTOMY WITHOUT DRAINAGE IN THE TREATMENT OF GALL BLADDER DISEASE

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CHICAGO

A careful study of the literature of the past decade, regarding the modern treatment of gall-bladder disease, leads one to certain conclusions: (a) that danger lies solely not in operation, but in protracted conservative procedures; (b) that the dangers in operation mostly arise from causes strictly associated with the surgical method employed despite excellence of technic; (c) that removal of the gall-bladder gives better results in the great majority of cases than does cholecystostomy; (d) that although under the present method of surgical procedure, the immediate and late mortality rates have been much reduced in the hands of skilful operators, yet the general operative mortality in large series of cases is still too high, and that a minimum, varying from 20 to 40 per cent. of the operated patients remain either unimproved or with their condition only more or less ameliorated.

The statement (a) is borne out by statistics, furnished by Enderlen and Hotz,¹ which show, in 12,144 cases of biliary tract disease collected up to 1923, that the prognosis was better with surgical than with medical treatment.

Regarding (b) Stanton,² who studied the causes of death in 400 operated cases of biliary tract disease reported in the literature, and 100 others in local records (altogether probably representing about 10,000 operations) lists the most important as peritonitis, shock and hemorrhage, pulmonary embolus, pneumonia and cholemia. The first four of these are those which are admitted as the immediate cause of death and complications by almost all writers on the subject. Of course, there are often extrinsic causes, but here we are dealing with operative procedures only. Many complications in cholecystectomy, exclusive of hemorrhage, are traceable to biliary seepage from the cystic duct stump and from the bed of the gall-bladder not sufficiently protected by accepted scalpel surgical methods.

Davis³ states that the most glaring fault in gall-bladder surgery in the past has been the reckless use of gauze and cigarette drains. Furthermore, peritonitis, the most common cause of death in biliary tract surgery (in Enderlen and Hotz' statistics it was almost double that of the next highest cause, pneumonia), is due to seepage of bile, principally from the cystic duct stump and the bed of the gall-bladder which contains not only biliary capillaries but also occasionally bile ducts of large caliber which may be injured during a cholecystectomy. Bile, sterile or not, in the peritoneal cavity has been proven to act as a true chemical poison.

In regard to (c) Blalock,⁴ in a statistical study of 880 cases of biliary tract disease treated in the surgical division of the Johns Hopkins Hospital from 1889 to 1921, considered that this series seemed almost ideal for comparison between cholecystectomy and cholecystostomy, inasmuch as 49 per cent. of the patients that were followed after leaving the hospital had a gall-bladder removed and 51 per cent. had it drained. The percentage of cured and improved patients following the two types of operations were about the same, but only 39 per cent. of the deaths followed cholecystectomy, whereas 61 per cent. of the deaths followed drainage of the gall-bladder only. In addition, 79 per cent. of the patients who had recurrence of symptoms (with and without another operation) had had the gall-bladder drained at the original operation. A cholecystostomy had first been performed on 89 per cent. of the patients who had to undergo a second operation. The facts presented by this study led Blalock to believe that *the gall-bladder should be removed in all cases in which it is diseased* (except in cases with malignant diseases of the biliary tract).

Cattell⁵ in 1929, reporting upon 634 cases treated at the Lahey Clinic, Boston, concluded that cholecystectomy was the operation of choice for gall-stones and acute or chronic cholecystitis. Most other writers are in general accord with these opinions.

Finally, in regard to (d), while recent reports from the best clinics show an immediate operative mortality of only 1 to 2 per cent., yet the extensive collected materials in the statistics of Enderlen and Hotz (12,144 cases of biliary tract disease) gave a *global mortality of 9.28 per cent!* In the 4,032 cases of cholecystectomy collected from the literature by Sanders,⁶ the operative

mortality was 4.73 per cent. Verbrycke⁷ states that in the Garfield Memorial Hospital, Washington, D. C., the mortality rate for biliary tract surgery, by individual operators there, during two years, *varied from 1 to 28 per cent! Mortality rapidly advances with age*; in the sixth and seventh decades, the period in which most patients undergo operation, the mortality rate is more than double that of the fourth decade.

Reports of end results in biliary tract surgery, especially in cholecystectomy, show that only about 70 to 80 per cent. of those traced have made good recoveries. It is at least presumable that among those not traced the number of complete recoveries would be much smaller. From a careful survey of the literature it appears *that the average surgical mortality in uncomplicated cases is about 8 to 10 per cent., and in complicated cases, 10 to 20 per cent.*

The question of drainage or no drainage following a scalpel cholecystectomy has a good deal to do, apparently, with the question of mortality and complications and is one that is much debated. Many surgeons (including the writer until recently)⁸ are still guided by Kehr's dictum that "proper drainage is half a successful gall-bladder operation." It seems equally true that drainage is half an unsuccessful operation. Witzel, Riedel, Rotter, Bier, Hoffmeister, Haidenhain, Haberer and Ritter attempted series of gall-bladder operations without drainage to return to the drain after sad experiences. However, many surgeons are turning toward tight closure of the abdomen without drainage. The indications for this have been widened during the recent few years; Sanders, Verbrycke, Fowler,⁹ Richter and Zimmermann,¹⁰ as well as others, favor it and report series of cases with better operative and convalescent results than with drainage operations. The chief dangers of drainage are: bile seepage, possibility of thrombosis and embolism, hemorrhage from erosion of vessels, cholemic bleeding, embarrassed cardiac action, particularly in the aged, pneumonia, acute dilatation of the stomach, biliary fistulae, herniae, etc. These are the main dangers of scalpel surgery of the bile tract in general, but most surgeons still balk at leaving the abdomen undrained, especially in infected cases. Theoretically, a dry operative field and a tightly closed abdomen seem, unquestionably, best, but with the present technic of scalpel cholecystec-

tomy such conditions with complete satisfactory peritonealization cannot be often realized. Pribram,¹¹ of Berlin, noted no operative death in a series of 200 consecutive cholecystectomies for biliary disease which comprised complicated and infected cases. In the total series of 215 cases he had only one post-operative death from pneumonia some days after operation.*

He attributes these happy results to "an isolated destruction of the mucous membrane of the gall-bladder with the thermocautery" after dividing the cystic duct. He terms the procedure mucoclasia. In my hands charring of the mucous membrane in biliary disease as advocated by Pribram has been disappointing. Attacks of violent pains in the right hypochondrium, and continuation of other symptoms complained of by some of the patients prior to carbonization caused me to abandon that procedure.

Despite the good results noted from carbonization of the mucous membrane by Pribram it seems to me that the charred eschar left behind following the destruction of the mucosa acts, as all eschars resulting from burns do, as an impervious, loosely attached foreign substance, carrying with it the potential dangers of partial or possibly total detachment. This may result in hemorrhage, thrombus, and embolus formation, and an onrush of discharge of the liquid elements of the blood from the burnt areas. Such course of events carries with it the possibility of liberating dormant or active pathogenic microorganisms from the remaining Rokitansky-Aschoff sinuses. Pribram¹² later substituted the diathermy current for "carbonization of the mucous membrane of the gall-bladder (mucoclasia)." He aims at "burning," "charring" and "carbonization" and not at coagulation.

In order to avoid confusion let it be recalled that if a flat electrode is *firmly* applied to a tissue surface and a current of sufficient amperage permitted to pass through it, coagulation of the proteins of the tissue results in a few seconds. This is shown by the white color assumed by the tissue thus treated. This is called *electrocoagulation*. On the other hand, if this same electrode is *not applied firmly* and a small space of air is permitted to intervene between the electrode and tissue (dielectricum), sparkling (fulguration) results and carbonization with black

*Albertin (22) reports that in 310 cases Pribram had 9 deaths.

discoloration of the tissues ensues. A reapplication of the electrode to such carbonized surface will not permit coagulation to take place.

Mucoclasia by carbonization, it will be seen, is an entirely different method from my procedure of cholecystelectrocoagulectomy which aims not at the charring of the mucous membrane but at complete destruction of the entire gall bladder wall by electrocoagulation. The rationale for my procedure is evident. The micro-photographs

liver bed is electrocoagulated and then sutured over by serosa which is additionally reinforced and protected by the ligamentum falciforme hepatis (vide infra).

With the object of possibly obviating the evident disadvantages of carbonization, I undertook to pursue a series of experimental* and clinical studies in that direction.

Dogs, macacus rhesus and macacus leoninus were the experimental animals used. Carboni-

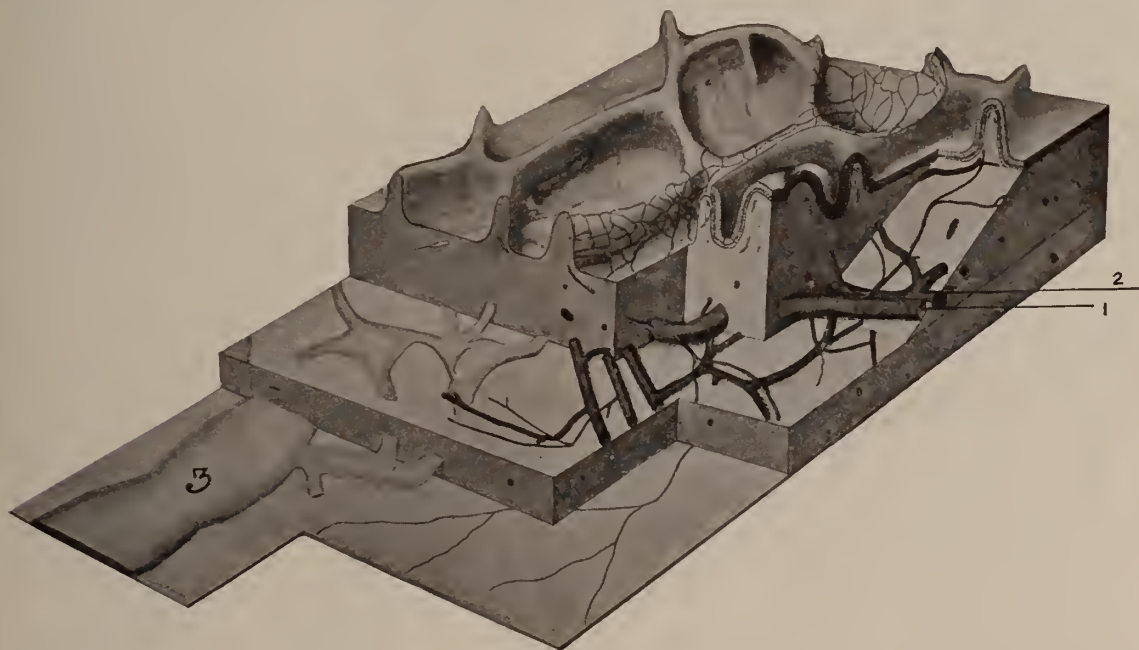


Fig. 1. Reconstruction of wall of dog's gallbladder. (60x) 1, arteries; 2, veins, 3, lymphatics. (After M. T. Sudler).

here submitted tend to prove that carbonization with its insulating qualities is inadequate to destroy the deeper layers of the wall of the gall-bladder which harbors pathogenic microorganisms; it thus defeats the very aim of the operation, viz., the destruction of the diseased gall-bladder. Cholecystelectrocoagulectomy destroys the disease harboring components of the gall-bladder wall. Furthermore, one can readily visualize the obvious disadvantages of a gall sac, the mucous membrane of which alone has been carbonized and the sac resutured. This, in substance, represents the mucoclasia procedure. In my operation, the redundant diseased gall-bladder wall is cut away. The diseased portion overlying the

zation was carried out on the mucous membrane of the gall-bladder of these animals to varying depths into the muscularis. After some weeks or months the gall-bladders of these animals were removed. It was shown that destruction of the mucosa and even portions of the muscularis by carbonization (to the depths which the usual carbonization allows) still showed sinuses remaining in the deeper portions of the gall-bladders thus treated. This may be readily understood when we consider that the gall-bladder is composed of a mucous membrane which forms anastomosing folds and is lined with high columnar epithelium which secretes a mucoid substance (goblet cells with basophil and oxyphil granules). It rests on a well developed basement membrane. The tunica propria contains collagen, elastic fibers and many lymphocytes,

*I wish to acknowledge my appreciation to Dr. Karl Meyer and Mr. J. F. Askin, Registrar of the Cook County Graduate School of Medicine for the encouragement given me in these experimental studies.

plasma cells and wandering cells. The muscularis consists chiefly of circular and a few oblique and longitudinal muscular fibers. The connective tissue membrane is divided into a fibrous layer of collagen fibers, a subserous layer of loose connective tissue and peritoneum. (Fig. 1.) The epithelium forms deep excavations into the underlying tissues which may perforate the muscularis and even reach down to the fibrous layer.



Fig. 2. Normal human gallbladder. (40x). 1. Points to mucosa. 2. Muscularis. 3. Position of serosa. 4. Rokitansky-Aschoff sinus, often erroneously called Luschka's gland extending nearly throughout entire thickness of muscularis.

These are known as the glands or sinuses of Rokitansky-Aschoff¹³ described in 1842. They are sometimes referred to as the glands of Luschka (Fig. 2). According to Boyd,¹⁶ in chronically inflamed gall-bladders these herniations or out-pouchings of the mucosa may often be seen to pass for varying distances into the muscularis and sometimes even into the perimuscular layer. The destruction, therefore, of the mucosa alone or even the muscularis for a limited distance will not destroy the deeper sinuses which may and apparently do harbor pathogenic micro-organisms. The lymph apparatus of the gall-bladder runs to the periphery of the organ and thence to the cystic gland. (Figs. 3, 4 & 5). Infections may thus be transmitted from the remaining sinuses to the liver

and pancreas, again emphasizing the inadequacy of charring the mucous membrane in the hope of eradicating deep-seated foci. It will be recalled that charring produced by any agent has limited penetrating powers, for as soon as the eschar is



Fig. 3. Gall bladder of adult man showing superficial lymphatics half natural size (Sudler). Fig. 4. Gallbladder of man 19 years old, dead of chronic nephritis, showing large superficial lymphatics. (Sudler).



Fig. 5. Lymphspaces of gallbladder of dog. (Sudler).

formed it acts as an insulator to the underlying tissue and prevents heat diffusion. In gall-bladders much thickened by disease such eschar

affects only the superficial portion of the thickened gall bladder wall.

The current of electrocoagulation, on the other hand, accomplishes deep penetration and the heat thus generated extends along the fluid conducting paths of the blood and lymph stream. It is because of that, that one observes in Fig. 6 (depicting the liver of a guinea pig in which an electrosurgical, coagulating, incision was made and the portal vein injected with India ink), that not only does the coagulating current affect the tissues along the line of incision but that the

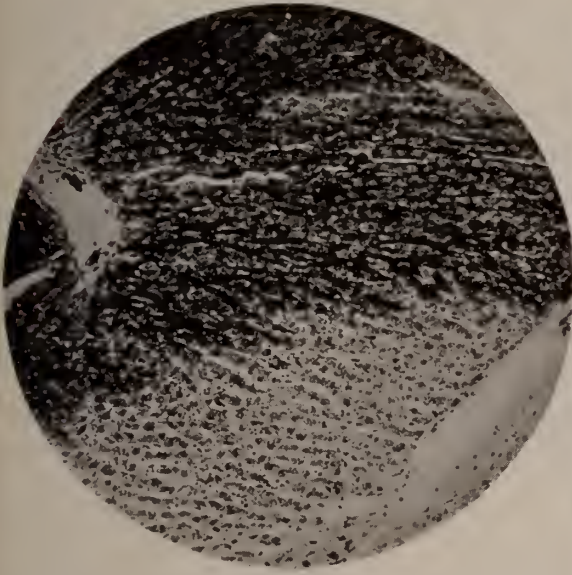


Fig. 6. Liver of guinea pig. Observe line of demarcation between coagulated zone (coagulating cut) and zone in which blood capillaries are filled with India ink. For a distance of 3 mm. the blood capillaries remained empty. Here also the closure of the blood capillaries as in the case of the lymphcapillaries is effected *not by thrombosis but by coalescence (coagulation) and junction of the vessel walls.* (Zschau).

blood capillaries next to the coagulated zone remained inaccessible to the penetration of the India ink for a distance of 3 mm.

While it is true that thermocauterization from any form of heat also closes intercellular spaces where the heat contacts the tissues, it is equally true that such closure (limited in extent), is soon followed, as a result of the marked hyperemia adjoining the carbonized area by an intensification of the lymph and blood capillary flow. This tends to dislodge the eschar and thrombi and predispose to bleeding. Such augmentation of wound secretion, consisting of lymph, toxic

products, bacteria, loosened cellular elements and so forth, are obviously undesirable factors. Electrocoagulation effectively prevents this. In infected areas particularly is electrosurgery of service. Its value in prevention of dissemination of infectious materials, especially the prevention of the formation and dislodgement of thrombi, so likely in carbonization, becomes apparent. The



Fig. 7. Mesentery of guinea pig. Electrocoagulation with small ball-electrode along course of mesenteric vessels followed by subserous injection of India ink of the lymph vessels of the mesentery and wall of bowel. Arrow points to spot of coagulation followed by complete interruption of lymph vessels and spindle shaped narrowing and closure of blood vessels. Note that adjacent lymph vessels not touched by the electrode, remained unaffected. (Zschau)

tendency to infarction, pneumonias, etc., as a result of embolism, so frequent in operations on the biliary tract, are thus guarded against.

The illuminating studies of Zschau,¹⁴ who injected India ink into the portal veins of guinea pigs after electrocoagulating portions of the liver, proved the value of electrocoagulation. The

remarkable effect of this current is that it *does not cause thrombosis* in the blood capillaries and smaller vessels. Occlusion of capillary spaces and vessels in electrocoagulated zones results from fusion of the coagulated vessel wall structure. Such fusion is preceded or accompanied by a recession of the blood column in the blood capillaries and small vessels, at the point of contact with the electrode. The ends of the vessels become spindle-shaped and fuse. (Figs. 7 & 8.)

The lack of absorption from the wound area explains the absence of shock in electrosurgical procedures. Likewise, shock, in the sense of Kobak,¹⁵ is prevented by capping the nerve ends during the coagulation process.

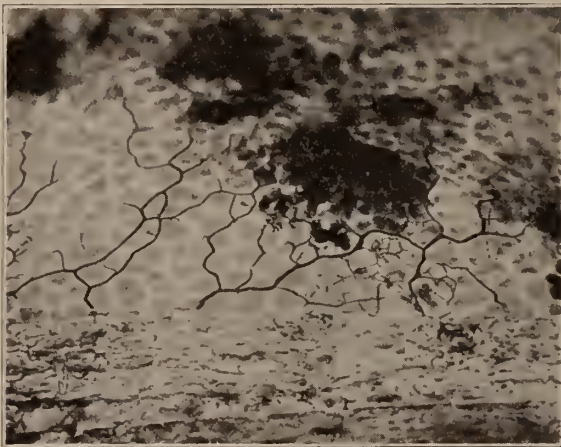


Fig. 8. Liver of pig. Injection of large lymph vessels of Glissons capsule in pig with India ink. Note interruption of circulation in lymph vessels at margin of coagulated zone. (Zschau)

It must be remembered that electrocoagulated surfaces on parenchymatous organs (liver, kidney, spleen) do not tend to detachment, as is the case in carbonization, but to encapsulation and final resorption. (Fig. 9.) As long as there remain structures capable of union over the electrocoagulated area, wound healing is not interfered with. Even if only skin and subcutis are united over the coagulated region the wound will still heal (von Seemen) as long as no infectious material reaches the operative field from without or from within (hematogenic or by way of the lymph channels).

While my experimental studies and clinical observations in a series of unselected cases of gall-bladder disease showed most encouraging results and pointed emphatically to the undesir-

ability of drainage of any sort, and the fact that electrocoagulated areas demand peritoneal covering for rapid healing, caused me to approach the problem from another angle. I found that this may, in a measure, be effectually accomplished by bringing the peritoneal surfaces of the electrocoagulated gall-bladder into apposition (*vide infra*). To reinforce that protection and to further insure against biliary seepage, the ligamentum falciforme hepatis was sutured over these areas in the experimental animals as well as in the clinic and the results found gratifying.



Fig. 9. Electrocoagulation of surface of liver with graft of falciform ligament. Brindle bull-dog. Specimen removed 7 weeks after operation. An area the circumference of a nickel was electrocoagulated to a depth of about 2 cm. A freely detached portion of the falciform ligament was sutured over it. Note firm union of falciform ligament to electrocoagulated surface of liver. Arrow points to area described.

(Fig. 10.) Both pedicle and free grafts were used over the bed of the gall-bladder and the stump of the cystic duct. In all operations performed no drainage was used.

From the foregoing it is evident that charring of the mucosa in the sense of Pribram fails to fulfill the requirements of destruction of all parts of the affected gall-bladder wall. To further emphasize its futility we are indebted to Rosenow,¹⁷ who studied forty-seven cases in which the gall-bladder was removed at operation and from which cultures were made from the contents and wall of the organ. In many instances, cultures obtained from the contents differed from those obtained in the wall and in some instances cultures from the latter source

were positive, although the bile was sterile. The prevailing type of organism found in the wall was a streptococcus. Brown¹⁸ found streptococci in 17 per cent. of cases in which inflammatory changes in the gall-bladder were marked. Illingworth,¹⁹ in a study of 100 cases, has found that streptococci are much more frequently found in the wall of the gall-bladder than any other organism and Wilkie²⁰ concludes that streptococci

subserous layer next to the peritoneum show the most severe inflammatory changes, while the epithelium may look intact in the most severe grades of inflammation. It must be remembered that the epithelium of the gall-bladder disappears in about five or six hours postmortem.

The standard technic of the present method of cholecystectomy by the scalpel is scarcely susceptible of improvement. Everything that can



Fig. 10. Results of cholecystelectrocoagulectomy with falciform implantation. Police dog. (See author's technic.) Specimen removed seven weeks after operation. 1. Falciform ligament. 2. Lobe of liver. 3. Liver bed. 4. Ligated cystic duct. Note fine adhesions between falciform ligament and liver bed. Also, firm union of lower end of falciform ligament with stump of ligated cystic duct.

play an important role in the production of cholecystitis. In view of this it stands to reason that carbonization of the mucosa will not effectually affect the micro-organisms inhabiting the deeper sections of the gall-bladder.

Besides it is generally agreed now that in cases of cholecystitis the whole wall of the gall-bladder is more or less extensively involved in the inflammation. (Fig. 11, 11a and 11b.) Graham²¹ emphasizes that *very often the dependent layers of the gall-bladder, especially the*

be done, preoperatively, operatively and post-operatively, for the safeguarding of the patient appears to be done in most standardized hospitals, yet this current method permits the death of patients and disability to survivors to continue. Improvement of results must, therefore, be looked for by intensive study and improvement of the methods in vogue.

Encouraged by my experimental studies, the operation I devised was performed on a series of cases of varied biliary conditions (acute and

chronic cholecystitis, cholelithiasis, gangrene of the gall-bladder, early perforation with escape of bile, suppurations, etc.). The results were gratifying.*

AUTHOR'S TECHNIC OF CHOLECYSTELECTROCOAGULECTOMY

General anesthesia (nitrous oxide—oxygen, ether—never ethylene). Open abdomen with scalpel or diatherm knife. Expose gall-bladder.



Fig. 11. Chronic hyperplastic cholecystitis. 1. (Roussy, Leroux and Oberling). a. Hyperplastic mucosa. b. Luschka's gland in longitudinal section. c. Muscularis. d. Inflammatory focus.

Examine biliary passages and adjacent viscera thoroughly. Do not endeavor to forcibly dislocate liver. Such insults are often responsible for right lower lobar pneumonia. Adequate exposure is essential. (Fig. 12.) Isolate field of operation with moist, warm laparotomy sponges. Aspirate gall-bladder. (Fig. 13.) Ligate cystic duct between two catgut ligatures and divide it. Incise gall-bladder from above downward (diatherm knife or scissors). Remove stones. (Fig.

*Space forbids a complete report of all cases comprising my series, which is now in preparation and will be made the subject of a special article.



Fig. 11a. Chronic cholecystitis (35x). 1. Mucosa. 2. Much thickened muscularis showing all phases of chronic inflammatory reaction.

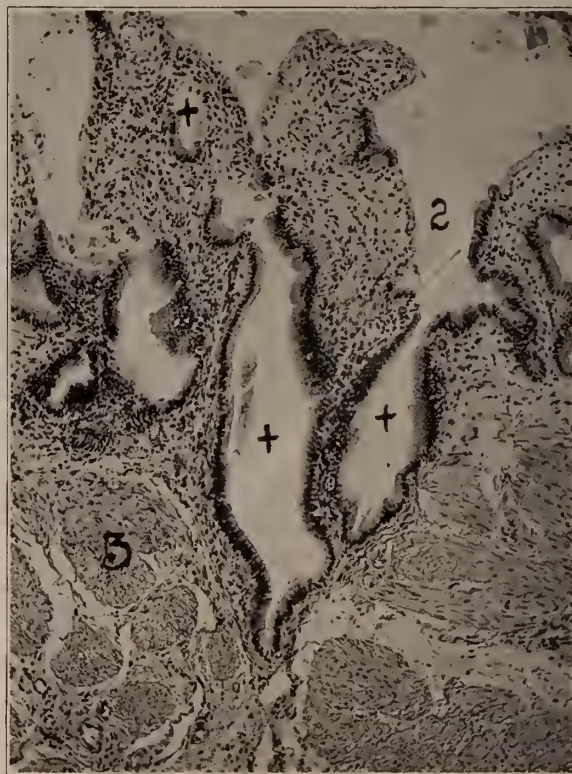


Fig. 11b. Chronic cholecystitis (x 85) xxx Rokitan-sky Aschoff sinuses in longitudinal section. 2. Epithelium covering mucosa. v. Muscularis.

14.) Explore biliary ducts. Do not force probes or sounds. Gentle exploration will not traumatize the delicate biliary passages unnecessarily. Remove redundant portion of gall-bladder and electrocoagulate remaining part thoroughly but



Fig. 12. Insulated retractor used by author in cholecystelectrocoagulation.

not excessively. (Fig. 15.) *Avoid charring.* Remember that the field to be coagulated must be dry. A good apparatus, thorough mastery of how best to obtain the proper degree or coagu-

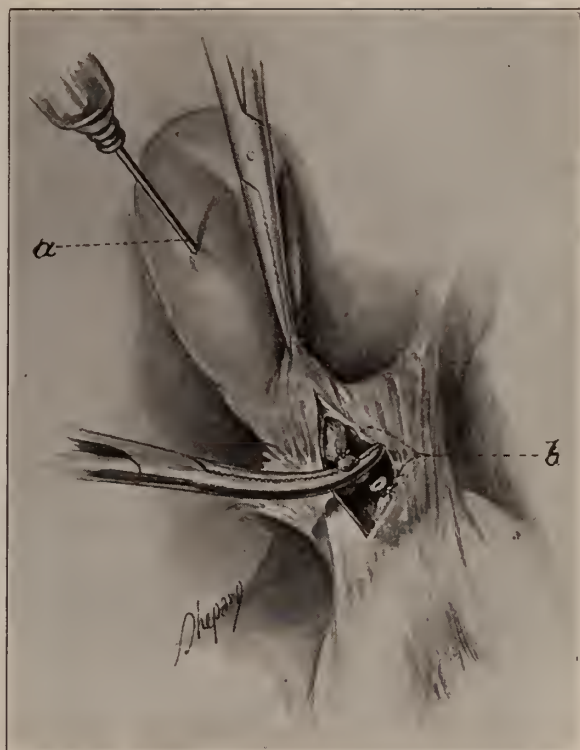


Fig. 13. (a) Aspiration of gall bladder contents. (b) Ligation and division of cystic duct.

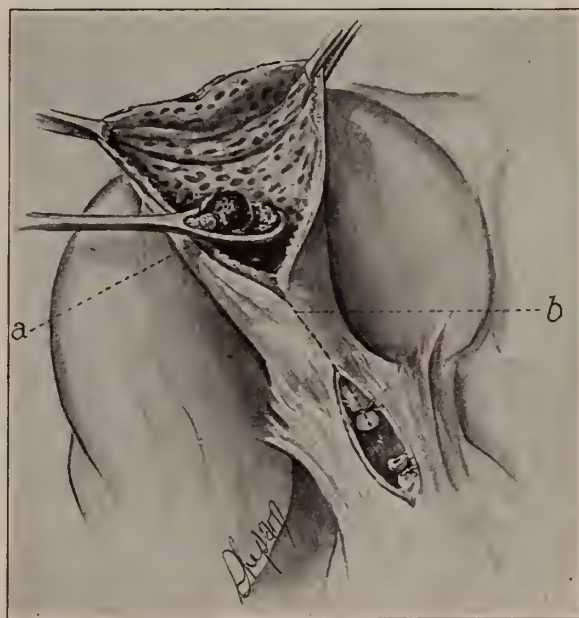


Fig. 14. Gall bladder opened. Gallstones scooped out. (b) Line of incision to complete opening of gall bladder.

lation (exact amperage and voltage plus well constructed electrodes) (Figs. 16, 16a and 16b),

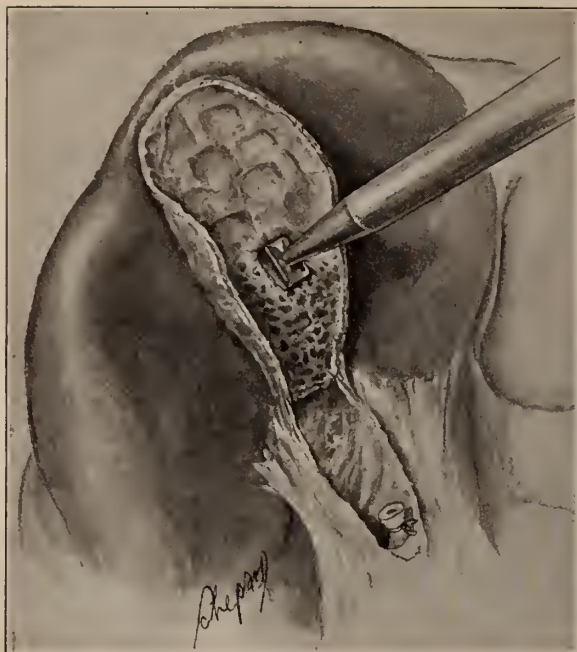


Fig. 15. Redundant portion of gall bladder removed. Remaining portion of gall bladder wall attached to liver bed electrocoagulated.



Fig. 16. Author's square electrodes used in cholecystelectrocoagulectomy. A later pattern has the handle bent at an angle to afford greater ease of manipulation.

are essentials.† Gauge carefully the degree of penetration of the coagulating current through the gall-bladder wall toward the liver bed. Coagulate slowly but thoroughly. With experience one will soon learn the proper degree of penetra-

†Fischer's model H diatherm apparatus has served me well.



Fig. 16a. Gall bladder of dog electrocoagulated with round electrode showing undesirable spaces left at contiguous areas.

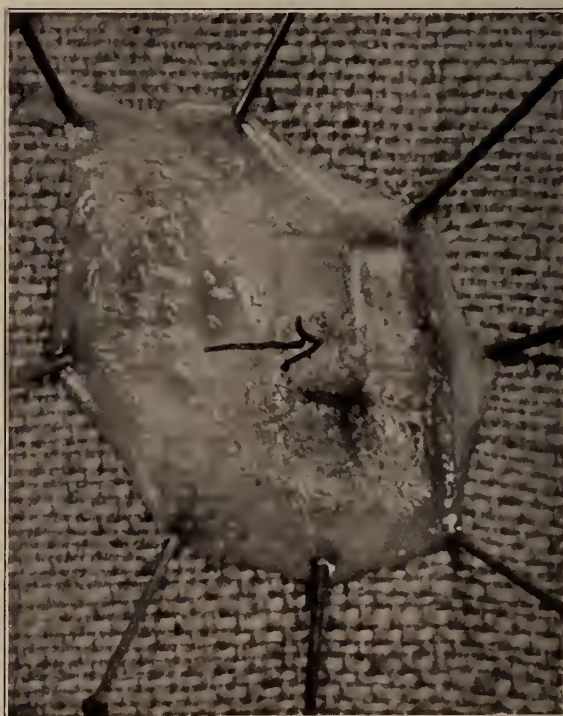


Fig. 16b. Arrow points to area on dog's gall bladder electrocoagulated with author's square electrode. Note absence of spaces unaffected by current.



Fig. 17. Author's asbestos or rubber shield to protect liver from undesirable electrode contacts during electrocoagulation.



Fig. 18. (a) Peritoneal borders at liver bed sutured over electrocoagulated area. (b) Pedicle flap of ligamentum falciforme hepatis ready to be sutured over suture line covering electrocoagulated zone.



Fig. 19. Operation completed. (a) Pedicle graft sutured in place. Peritoneum covers area of cystic duct.

tion required through the thickness of the gall-bladder wall. To avoid injury to contiguous surfaces an asbestos or rubber shield may be made to surround the gall-bladder. (Fig. 17.)

Approximate the peritoneal edges carefully over the coagulated area. A fine curved needle to which a No. 0 catgut is swedged is used.

To further guard against the possibility of biliary seepage from the cystic duct and to supply serous surfaces, so essential in healing over

coagulated areas, I mobilize the ligamentum falciforme hepatis and swing it over onto the site of the liver bed and there attach it with fine catgut by a few sutures. (Figs. 18 and 19.) If the falciform ligament is short and cannot, by reason of chronic inflammatory adhesions, be swung into place, it may often be successfully dissected out and brought into position. If that is not possible it may be completely detached and sutured as a free graft over the area indicated. (Fig. 20.) In either event its lower end is placed to cover or cap the ligated cystic duct and its upper part is attached at the border of

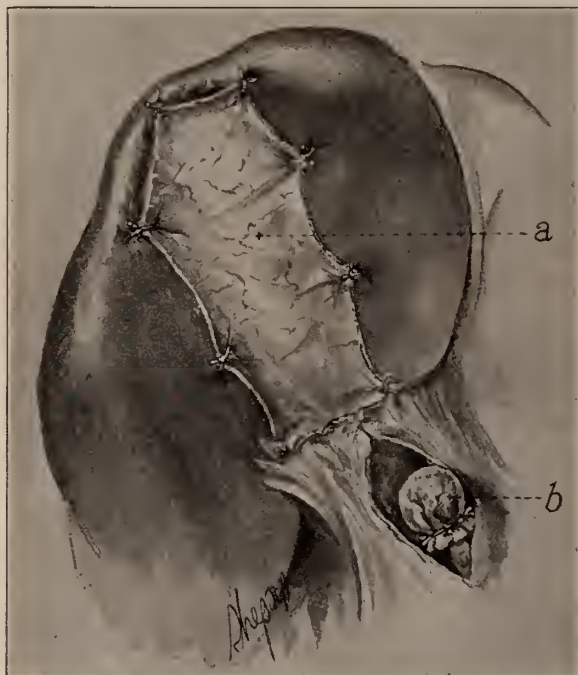


Fig. 20. (a) Free graft of detached falciform ligament attached to suture line covering electrocoagulated area. (b) Portion of falciform ligament capping cystic duct. (Semi-diagrammatic.)

the liver.† Careful hemostatis and exact closure of the abdominal wound complete the operation.

A thorough appreciation of Joules' law, coupled with an understanding of the effects of various apparatus and types of electrodes on the tissue to be acted upon, is essential. The appreciation of the differences in action of fulguration, desiccation, carbonization and electrocoagulation are imperative. (Figs. 21-25.) Also, it

†While studying the falciform ligament and its possible uses in surgical procedures in the upper abdomen I found the literature barren on the question.

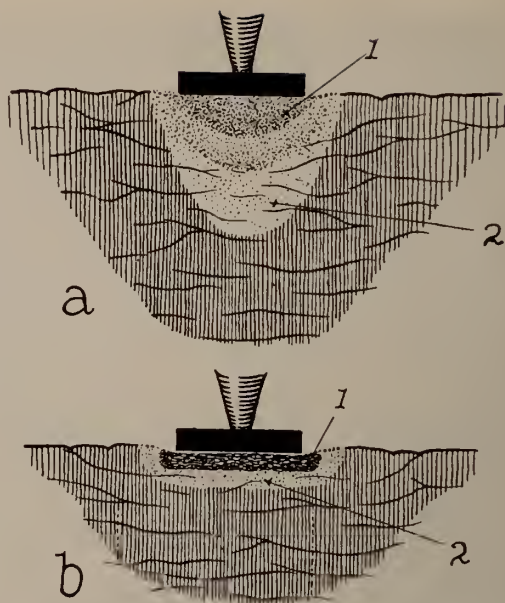


Fig. 21. Diagram of effects of electrocoagulation and of carbonization. In (a) one observes the degree and extent of electrocoagulation when correct technic is used. The dense area immediately under the electrode indicates that here the action is of greatest intensity. It gradually decreases as indicated in the diagram. Marginal action is seen to extend for some distance from the border of electrode. When improperly used and too much current is applied charring results immediately under the electrode (b). Such eschar insulates the area acted upon and further effects of coagulation are frustrated.



Fig. 22. Thermocauterization of wall of gall bladder of dog. (32x). 1. Normal folds of mucous membrane. 2. Rokitsansky-Aschoff sinuses dipping into normal muscularis. 3. Carbonized area. 4. Rokitsansky-Aschoff sinuses remaining in muscularis after thermocauterization of mucosa.

must be remembered that the depth of the electrocoagulation extends a little deeper than the

circumference of the electrode. (Fig. 26.) It is most intense immediately under the electrode. It extends also laterally to the electrodes (marginal action). Most important is the use of proper amperage and voltage. If too much current is used and the electrode improperly applied the aim of electrocoagulation is defeated and burning, with eschar formation, results. The eschar acts as an insulator and deeper coagu-

sembles in all respects the charring of a Paquelin cautery. The purpose of the operation is under such conditions defeated. The thickness of the gall-bladder wall is the indicator to the size of the electrode and the degree of current to be selected in order to effect the desired degree of electrocoagulation.

High frequency currents generate heat within the body, the penetration effect depending upon



Fig. 23. (75x). Effects of carbonization on gallbladder with chronic inflammation. Observe portion of Rokitansky-Aschoff sinus (right) persisting. Entire muscularis and serosa unaffected. Large vessel at bottom of section markedly engorged.



Fig. 24. (85). Effects of forced carbonization on wall of inflamed gallbladder. (1) Eschar. (2) Rokitansky-Aschoff sinus in transverse section. (3) Muscularis. (4) Serosa. Note excellent state of preservation of layers of gall bladder past the mucosa.

lating action is prevented. Attempts to remove the electrode in such cases will disclose that it is adherent to the underlying tissue. It then re-

I communicated my observations to Dr. R. W. McNealy, who informed me that he mustered the falciform ligament into use in 1931, in a case of marked changes in the gall-bladder, the major portion of which he trimmed away and after placing a catheter in the cystic duct and down through it into the common duct, a small iodoform gauze wick was placed against the remaining portion of the gallbladder. He then freed partially the falciform ligament from its mooring near the free margin of the liver, turned it to the right and attached it to the lateral margin of the gall bladder edge. The catheter and gauze wick were brought out along this path.

(a) the proportion of the depth of the electrode, (b) the density of the current and (c) the duration of the application.

It must be remembered that the appearance of the tissues does not reveal to the naked eye the depth of actual tissue coagulation, for, indeed, tissue cells may be killed by coagulation without immediate demonstrable changes.

The healing process in electrocoagulated areas differs according to location. It is different on the surface than in the depths of body cavities.

In the former it tends to extrusion, in the latter to encapsulation and final absorption and reposition by fibrous tissue.

In the depths, as in the liver, for instance, adhesive processes over and about the electrocoagulated area are manifest within the first few hours after operation.

SUMMARY AND CONCLUSIONS

1. A method of electrosurgical removal of the gall-bladder is described which, when care-

2. A prerequisite to the achievement of satisfactory results is a patent common duct. An occluded cystic duct from any cause is an indication for cholecystelectrocoagulectomy.

3. Experimental studies have shown that any method of carbonization (fulguration, Paquelin and electrocauterization) predispose to hemorrhage, thrombosis and embolism. Such cauterization will not destroy pathogenic micro-organisms in the depths of the affected gall-bladder wall. Cholecystelectrocoagulectomy is free from

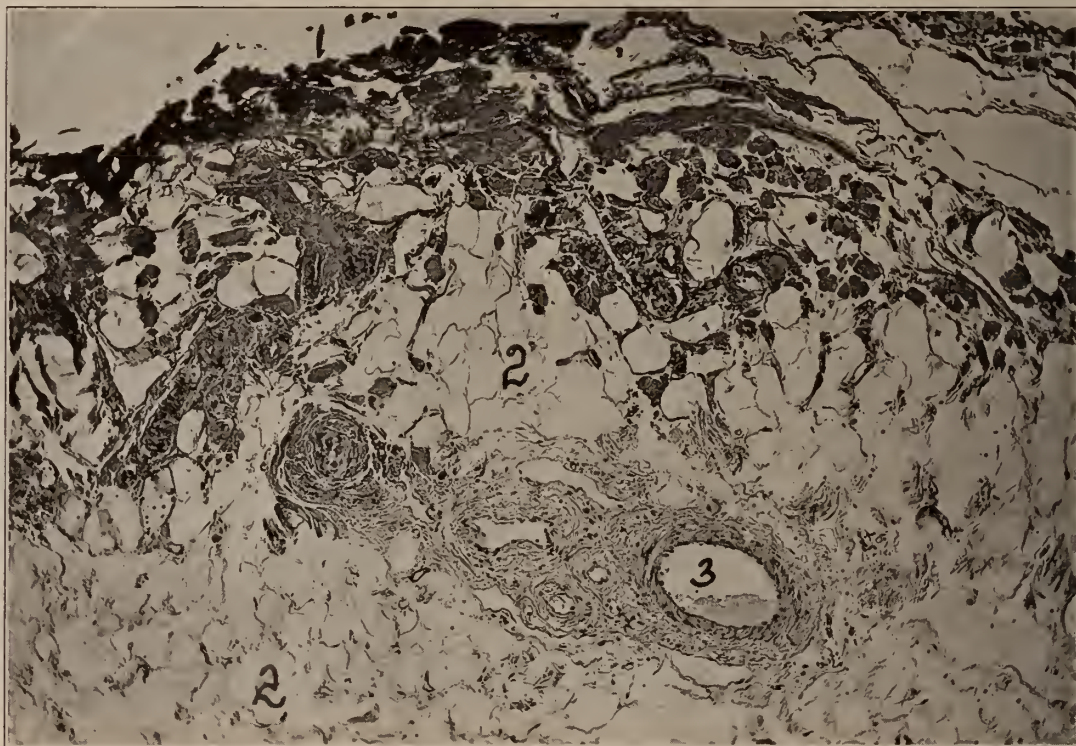


Fig. 25. (x85). Effects of electrocoagulation on diseased gallbladder (chronic cholecystitis). 1. Destroyed mucous membrane. 2. Vacuolated spaces and homogenous islands of tissue the result of tissue dissolution and coagulation. 3. Blood vessel empty with small coagulum in lumen. Note, all layers are affected in the coagulating process.

fully carried out, may be used in simple and complicated cases of gall-bladder disease without resorting to drainage. It reduces morbidity and mortality to a minimum and cuts hospitalization short. The much dreaded age factor in operations on the gall-bladder loses its terror. Shock is absent. The term *cholecystelectrocoagulectomy* is descriptive of the procedure. *It must not be confused with mucoclasia which aims at burning (carbonization) of the mucous membrane of the gall-bladder.*

these drawbacks and effectually accomplishes destruction of the entire thickness of the gall-bladder. The surgeon has under control the degree of penetration he wishes to accomplish.

4. The ligamentum falciforme hepatis may be used as a pedicle or free graft in covering sutured or raw surfaces to great advantage, thus reinforcing and protecting the areas concerned against seepage and safeguarding the processes of repair.

5. Electrocoagulated areas on intra-abdomi-

nal organs tend to heal by encapsulation. They do not interfere with wound healing. On the contrary, they heal promptly when the wound is closed securely. Therefore, drainage is not only undesirable but is distinctly deleterious. *Many patients succumb because of drainage.* It pro-



Fig. 26. Effects obtained from bipolar electrocoagulation of muscular tissue. Note smooth action and degree of coagulation produced at will. Observe depth of penetration (upper specimen) without carbonization, Sagittal section of electrocoagulated area (lower specimen). Note degree of penetration and marginal action of current. A strand of fascia blocked the progress of the coagulating process.

longs the healing process and predisposes to infection. Cholecystelectrocoagulectomy eliminates the necessity of drainage and its unpleasant sequelae.

6. Inasmuch as the global mortality of removal of the gall-bladder by the scalpel method in uncomplicated cases still ranges somewhere between 8 and 10 per cent. and in complicated cases from 10 to 20 per cent., it stands to reason that if (as in my series) cholecystelectrocoagulectomy promises to reduce the mortality in unselected cases (barring unforeseen accidents such as result from anesthesia, precipitate hepatic insufficiency, etc.) to near the zero point, the effort of acquiring an exact technic for its per-

formance, it will be agreed, is truly worth while. American Hospital of Chicago.

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THE TREATMENT OF PROSTATIC OBSTRUCTION BY MEANS OF TRANS-URETHRAL RESECTION*

HERMAN L. KRETSCHMER, M. D.

CHICAGO.

As a result of the tremendous strides that have been made in the field of preventive medicine, the acute contagious diseases are under control and the morbidity and mortality are reduced to almost an irreducible minimum. Partly as a result of this, the span of life has been increased some twelve and one-half years. Consequently,

*Read at the Annual Meeting of the Illinois State Medical Society, held at Peoria, Illinois, May 16, 1933.

a much larger group of people reach the age of sixty or more, so that, at the present time, it seems to be the consensus of opinion that the problem of medicine of the future will be the prevention and management of the degenerative diseases. Among the diseases of this group in which there seems to be a very definite increase in the death rate are hypertension, various types of heart disease, and lesions of the kidney.

Equally as much interested in this problem of prolongation and conservation of life as the internist, is the urologist, in the treatment of the man with bladder neck obstruction.

About one hundred and thirty years ago the English surgeons were familiar with the fact that by means of simple cutting devices introduced through the urethra they were able to reduce the size of the prostate, relieve the obstruction, and allow urination to reestablish itself, and in that way, prolong the life of the patient. I believe that to the English surgeons must be given great credit for this observation, namely, that simple incision reduces the size of the prostate and reestablishes urination.

You are all familiar with the surgical era, and the surgical era was provocative of such satisfactory results that these various transurethral methods soon fell into disuse.

At the present time, we are again swinging back toward the transurethral relief of obstruction, and there seems to be a definite tendency away from major surgery in the treatment of the various types of bladder neck obstruction.

Age Incidence. This paper is based on a series of 216 transurethral electric resections performed on 198 patients. The youngest patient in this series was thirty years of age and the oldest eighty-nine. An analysis of the age incidence is given in the following table.

TABLE OF AGES
Youngest Patient—30 Years
Oldest Patient—89 Years

35 to 40 years—1 case	60 to 65 years—53 cases
40 to 45 years—1 case	65 to 70 years—46 cases
45 to 50 years—4 cases	70 to 75 years—33 cases
50 to 55 years—12 cases	75 to 80 years—14 cases
55 to 60 years—26 cases	85 to 90 years—1 case

Benign hypertrophy of the prostate, as a rule, begins at about the age of fifty-five. However, you are all familiar with the fact that obstructions at the vesical orifice may occur not only in men at this time of life, but also in early adult life and moreover in infants and children. These

obstructions are generally due to median bars and contractures of the vesical orifice.

The difference in the number of resections and the number of patients recorded in this paper is due to the fact that in some of the cases a second resection was necessary. In one instance a third resection was required. The fact that more than one resection was necessary is explained by the following facts. In some of the early cases it was clearly evident that not enough tissue was removed at the first resection, especially in some of the very large prostates. In others, after one large lateral and a large middle lobe were removed, the sacral anesthesia wore off, or the patient became tired, and a second resection became necessary. In a procedure so free of shock there are no objections to doing a second resection when needed.

Diagnosis of the Nature of the Obstruction.

The diagnosis in this group of cases is illustrated in the following table:

Benign Hypertrophy	174 cases
Carcinoma	22 cases
Stricture and Folds of Mucous Membrane.....	2 cases

Total198 cases

Strictures and folds occurred in two patients who had had prostatectomies elsewhere and in whom symptoms persisted. They were completely relieved by resection.

It is of great importance, particularly in this group of patients, that the patient should be subjected to a complete physical examination and an accurately written history recorded. Many of these patients suffer from organic disease involving other parts of the body, necessitating treatment before the resection is undertaken. You are all familiar with the fact that about 40 per cent. of all prostatic patients have some disturbance of the heart, many of which need preoperative study and treatment. In the following table is given the incidence of concomitant organic disease.

ASSOCIATED GENERAL PATHOLOGY

Heart Disease:	
(a) Myocarditis (various forms).....	87 cases
(b) Coronary Occlusion	14 cases
(c) Angina	9 cases
Diabetes	10 cases
Lues	5 cases
Pulmonary Embolism	2 cases
Cerebral Thrombosis	2 cases
Bronchial Asthma	1 case
Hemiplegia	1 case
Carcinoma of the Liver and Stomach.....	1 case

Total132 cases

Thus in these 198 cases, 132 of them had serious organic disease besides the prostatic obstruction.

Associated Genito-Urinary Pathology. As a result of obstruction at the vesical orifice there develops, sooner or later, definite damage to the bladder and upper urinary tract with resulting stasis which predisposes to infection. It is of great importance that each case should have a complete survey of the entire urinary tract before any sort of operative procedure is carried out. In 53 of the 198 cases, associated pathological changes were found as given in the following table.

Diverticula of Bladder.....	17 cases
Carcinoma of Bladder.....	10 cases
Bladder Calculi	10 cases
Renal Insufficiency (marked).....	6 cases
Hydronephrosis (marked)	5 cases
Cord Bladder	3 cases
Solitary Kidney	2 cases
Total	53 cases

Cases With Residual Urine. During the early stages of prostatic obstruction the patient is able to empty his bladder completely. However, if the obstruction continues, there is a failure of bladder function, and residual urine is present. The amount of residual urine varies in each case and may vary in amounts in the individual case. In the following table are given the number of cases and amounts of residual urine of over 250 centimeters up to complete retention.

CASES WITH RESIDUAL URINE	
Complete Retention	28 cases
1000-500 centimeters	18 cases
500-250 centimeters	29 cases
Total	75 cases

In one of the patients with complete retention, a man of eighty-four, the top of the bladder reached almost to the xiphoid and thirteen days were necessary to effect *decompression*.

Infection of the Urinary Tract. In the largest number of prostatic patients there occurs, sooner or later, some infection of the urinary tract that requires preoperative treatment. In this series of cases bacteriologic study of the urine showed the following:

Bacteriology	
B. Coli	52 cases
Staphylococcus Albus	46 cases
Staphylococcus Hemolyticus	4 cases
Streptococcus Hemolyticus	8 cases
B. Coli Hemolyticus.....	2 cases
Eberthella	1 case
B. Proteus	1 case
Total	114 cases

It is of prime importance that the infection be controlled or entirely cleared up if possible. The following table gives the methods of preparation which were pursued in this series.

Indwelling Urethral Catheter.....	80 cases
Suprapubic Cystostomy	24 cases
Massage and Bladder Irrigation.....	25 cases
No preparation	69 cases
Total	198 cases

In addition to local methods of treatment, general therapy, such as forcing fluids, is important. Fluids should be given by mouth and when sufficient amounts cannot be taken this way, they should be given per rectum or subcutaneously.

Postoperative Course. Reactions following transurethral resections are generally very mild. Temperature reactions are less frequent than after prostatectomy, and, when they do occur, are less severe and do not last so long. In 117 resections in this series the temperature lasted only from one to two days. In the following table is given the temperature record.

POSTOPERATIVE TEMPERATURE	
Average Length of Time—2.5 Days	
Temperature 1 to 2 Days Only—117 Resections	
98.6° to 99°.....	18 resections
99° to 100°.....	53 resections
100° to 101°.....	67 resections
102° to 103°.....	43 resections
103° to 104°.....	13 resections
Total	216 resections

Hemorrhage. As a rule the urine remains blood-tinged for a few days. Our efforts are toward sending the patient back to the ward relatively free of bleeding. As a rule, the urine is no longer blood-tinged after the third day. In the occasional case it may be necessary to irrigate the bladder and to evacuate clots, but this depends upon the care exercised in controlling the bleeding at the time of operation.

There was only one case in the 216 resections in whom it was necessary to do a suprapubic for the control of hemorrhage and that occurred early in the series. Primary bleeding can be controlled at the operating table. Secondary bleeding, that is, bleeding which occurred between the tenth and the fifteenth day, was present in only 7 out of the 216 resections. In 6 of them it was only necessary to evacuate the clots and irrigate the bladder with hot permanganate. In one case, a man with carcinoma of the liver, it was necessary to resect the bleeding point.

Average Postoperative Stay in the Hospital. No attempt was made to hurry the patients out of the hospital. The records show that the shortest stay in the hospital was 2 days and the average stay, 6.5 days. These figures refer to the straight resection cases.

The group prepared by suprapubic cystostomy had a slightly longer stay, since to the resection is added the time necessary for the suprapubic fistula to heal. These cases had an average stay of fifteen days.

SUMMARY

The results obtained justify the statements that have repeatedly been made to the effect that this new form of treatment carries with it a much lower mortality rate, and this in spite of the fact that many patients are operated upon by this method late in the progress of the disease, the delay having been caused because they had been told by the surgeon in charge that the case was inoperable. The records show that the mortality was only 2.77 per cent. following 216 transurethral resections.

TRANSURETHRAL RESECTION OF BLADDER NECK OBSTRUCTION*

(A Motion Picture Presentation)

BUDD C. CORBUS, M. D.

CHICAGO.

Historical. The prostate is believed to have been first described by Nichilo Massa, a Venetian, who died in 1563. Riolanus, an Italian, about the middle of the sixteenth century stated his belief that the bladder could be obstructed by a swelling of the prostate.

French surgeons claim priority in the development of transurethral surgery of the pros-

*Read before Section on Surgery, Illinois State Medical Society, Peoria, May 16, 1933.



Fig. 2. First Description of Median Bar by G. J. Guthrie in 1830—103 years ago.

tate. However, history shows that the English physicians of a hundred years ago were careful anatomists as well as skilled surgeons, and to one of them, Guthrie, 1830, the credit must be given for developing the first instruments in the removal of certain types of bladder neck obstructions.

Although the instruments, but rarely used, at that early period were fairly good, when compared with our modern instruments, no provision was available for the control of hemorrhage. This resulted in the substitution of the cutting blade by the galvano cautery (the Bottini galvano cautery knife, 1877). This instrument was cumbersome and dangerous because the operator had no accurate way of determining to what extent the prostatic obstruction was burned.

W. N. Wishard of Indianapolis, in 1902, should be credited with devising the first cystoscope with the galvano-cautery attachment. With this instrument it was possible to determine just how deep and where to cauterize the bladder

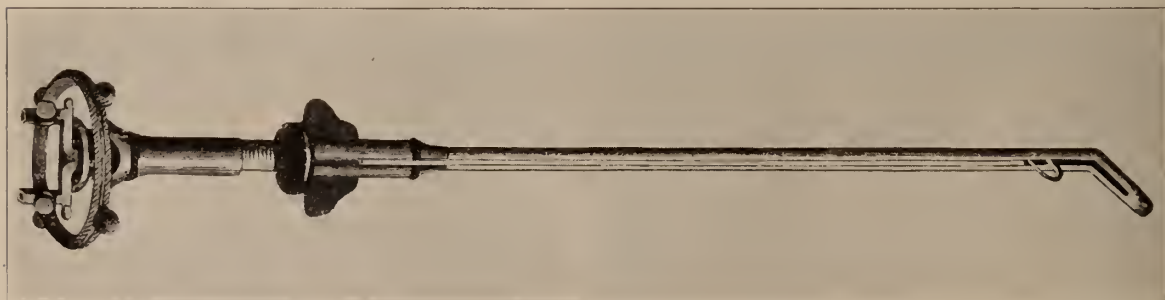


Fig. 1. Guthrie's Median Bar Excisor used 103 Years Ago.

neck obstruction. For technical reasons the method was never widely used.

With the development of Young's prostatic punch, in 1913, a new impetus was given to the procedure. Later, in 1923, Caulk added a diathermy coagulating electrode for the control of hemorrhage.

With the development of the newer high frequency cutting current, urologists throughout the country have given the procedure serious consideration, and it was soon demonstrated that large pieces of prostatic tissue and bar formations could be removed transurethraly.

Stern, in 1926, presented the first instrument

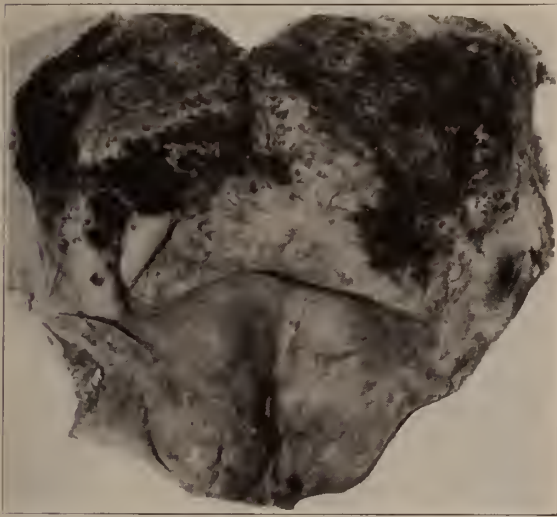


Fig. 3. Bilateral and Commissural Prostatic Hypertrophy. From Alexander Randall's collection. Not suitable for transurethral resection.

for removing vesical neck obstructions transurethraly by a high frequency cutting current.

During the succeeding years, many instruments were devised by American urologists, Davis deserves most credit, but none of them have met with the success of the McCarthy transurethral resector. At the present time this is the most widely used instrument for removing bladder neck obstruction and permits adequate control of hemorrhage.

The indications for transurethral resection of bladder neck obstructions are:

1. Hypertrophy of the prostate, and
2. Fibrous median bar.

Resection of carcinoma of the prostate is only a palliative procedure.

Although transurethral resection of bladder



Fig. 4. Solitary posterior commissural hypertrophy. From Alexander Randall's collection. If this lobe is extensive, it is not suitable for transurethral resection.



Fig. 5. Solitary subcervical lobe hypertrophy. From Alexander Randall's collection. Easily removed by transurethral resection.



Fig. 6. Typical fibrous median bar formation. From Alexander Randall's collection. Ideal for transurethral resection.

neck obstruction has been recommended for all types of prostatic hypertrophy, in the author's opinion it seems most applicable for:

1. Bilateral prostatic hypertrophy.
2. Solitary subcervical lobe hypertrophy, and
3. Fibrous median bar formation.

Diagnosis of bladder neck obstruction: Cystoscopy is the only accurate method of determining the type of obstruction. Rectal examination, however, is of value, but is not conclusive except in carcinoma. The typical hard, fixed, prostate is always indicative of cancer. Urinary retention is present in bladder neck obstruction in every instance and catheterization for its relief is often followed by dangerous sequelae, consequently great care should be taken in the choice of a catheter to relieve and measure urinary retention. The old style silver catheter should never be used except as a last resort. A No. 18 to 20 French scale soft rubber catheter is preferable, and if this is not available, a Mercier

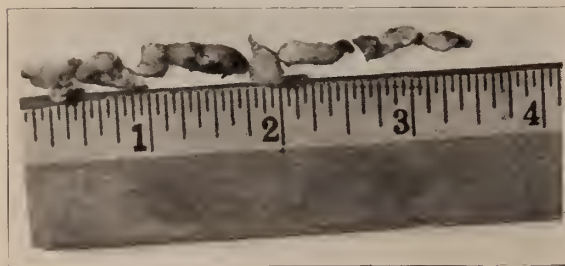


Fig. 7. Size of some of the pieces removed.

(prostatic) catheter should be substituted. It is always well to use an oily lubricant in the passage of the instruments.

The use of the indwelling catheter to promote urinary drainage is substituted for suprapubic cystotomy. This method of drainage is continued until the patient has been satisfactorily prepared for resection.

The most important factors in the preoperative care are:

1. Stabilization of blood-pressure.

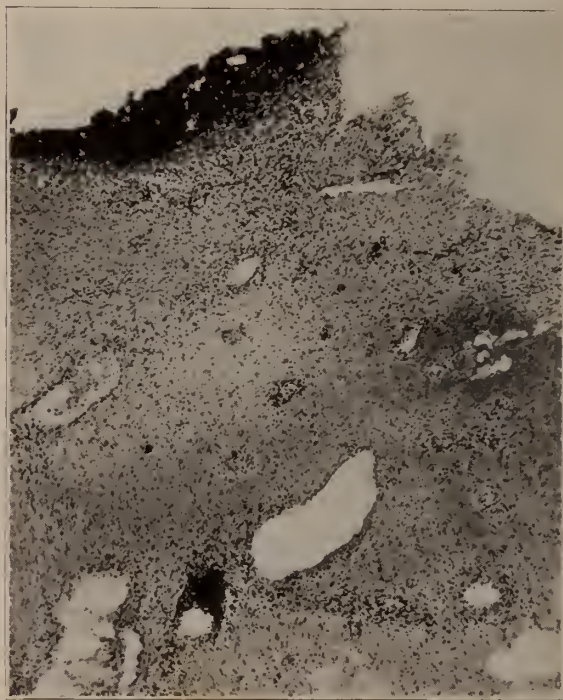


Fig. 8. Pathological study of excised tissue shows depth of burn about $\frac{1}{3}$ m.m.

2. Improved renal function, as indicated by blood chemistry and excretory tests, and
3. Condition of heart, as indicated by clinical and electrocardiographic examination.

Vasectomy is performed as a routine procedure before operation to minimize the possibility of a complicating epididymitis.

It is inadvisable to keep an old man in bed during the preoperative stage, so he is encouraged to be out of bed and to walk as much as possible.

The transurethral resection is accomplished by:

1. The utilization of an especially constructed machine that delivers a high-frequency

current that seals as it cuts the tissue under water.

2. The McCarthy transurethral resector.

In our series of resections spinal anesthesia, using the Pitkin solution, has been our choice.

While this procedure is fraught with far less complications than the open operation for prostatectomy, it requires most meticulous care in its execution, and for the time being the operation should necessarily be performed only by those with an extensive experience in transurethral work.

As the pathological study of the excised tissue shows the depth of the burn to be about one-third of a millimeter, postoperative possibility of later contracture is hardly possible. The superiority of this method if properly executed is obvious. There is no external incision and the duration of the patient's hospitalization is ten to fourteen days instead of three to six weeks with the open operation.

SUMMARY

I believe that transurethral resection has received more publicity both among the medical profession and the laity than any other operation of modern times.

Patients have called me on the telephone, stating their desire to be operated upon at once, honestly believing the whole procedure could be accomplished in a few days. Surgeons as well, in their endeavor to perform the operation, have often given the impression that the whole procedure is nothing more than a hospital holiday.

I hope I have clearly shown you in this presentation that there are certain types of obstructions that should not be attempted by this method.

Any surgeon who is trained in the procedure can shave a hole through the obstructed vesical neck, but will the end results be as satisfactory as some form of open operation? The hospitalization may be of shorter duration, but the attending complications and final results I am sure will not compare with a suprapubic or perineal prostatectomy.

There have been no fatalities in my series. The oldest patient that I have operated upon is 84 years of age and the youngest 28 years. Hemorrhage has occurred twice, necessitating opening the bladder. Urinary sepsis is a frequent and

often prolonged complication and occasionally results in pyelonephritis.

The decision as to whether a given case is suitable for a resection or not, must be decided upon after a careful cystoscopic study of the vesical neck has been made. It is here that the experienced cystoscopist who interprets what he sees correctly can definitely decide upon the correct surgical procedure to advise.

Transurethral resection is a surgical procedure, often times more tedious and difficult to perform than the open operation. Careless, incomplete removal of the obstruction can only result in disappointment for both patient and surgeon.

DISCUSSION ON PAPERS OF DRS. KRETSCHEMER AND CORBUS

Harry Culver (Chicago): A fine combination of papers, I think, in that we had a nice demonstration and treatise on the history and technical part of this procedure, preceded by a wonderful study of the fine bunch of cases, I think that had those two papers been reversed it probably would have been better.

In looking over the procedure as a whole, I think we can definitely state there are certain known factors about this and certain few definitely unknown factors. Those which are known by all those who have attempted to do this give evidence of a very difficult, very technical procedure, which calls for instrumentation, experience, calls for knowledge of anatomy of the posterior urethra and vesicle neck. Any one without those two prerequisites will eventually have grief.

Another known feature is that with any type of vesical neck obstruction where a resectoscope can be passed sufficient tissue can be removed. I don't say it is right that it should be removed, but sufficient tissue can be removed. Another thing which appears to be well known is that marked sepsis or we should say urosepsis, especially upper urinary tract sepsis is the most common morbidity producing complication. People might take exception to that.

Dr. Kretschmer is to be congratulated upon the small number of clinical incidences of pyelonephritis. I would like to ask Dr. Kretschmer, however, just how he interprets thirteen cases with a temperature of 104, where he cites but three instances of pyelonephritis.

It is my impression of urethral instrumentation followed by reaction and I believe it is the general consensus of opinion that is an indication of an upper urinary tract infection; in other words, so-called urethral fever is an expression of an upper urinary tract infection.

A thing which has not been mentioned, which I think is a pertinent factor in this connection is that these resections do not disturb the potency of the individual, a factor not of great importance to the general

run, but of considerable importance in a few extra-ambitious old men.

Some of the unknown features of this procedure, I say unknown, as far as I have been able to determine they are unknown, are the permanency of the results in the doubtful group; that is the group of prosthetic hypertrophy. Another unsettled problem, as far as some individuals are concerned, is the proper selection of cases. Some will state that only this group or that group should be so managed; others state they will resect anything where they can pass a resectoscope, which is a twenty-four or twenty-eight. Just what cases should be classified as resectible in the general run of vesical neck obstructions? I think all believe that the median bar is the ideal selection for this procedure and is the one that was probably the first cause of the development of the procedure, starting back, as Dr. Corbus has shown, some years ago and increasing efficiency of the procedure up to the present time.

There will be exception to the next classification which I make, but I am honestly of the opinion that all carcinomas of the prostate which are clinically diagnosed as such are not cases for major surgery, generally speaking. These cases are ideal for resectoscopic procedure and in many instances, of course, must be resected from time to time. Dr. Kretschmer cited two cases. I have had two recurrences within a year. They can be resected with less difficulty the second time than before and are entirely comfortable and healthy, definitely carcinomatous clinically and histologically.

Another type which I believe is ideal and anything but ideal for at least a suprapubic enucleation is the fibrous type of prostate, either as such or associated, as it frequently is, with the bar. These are fairly simple to do with the resectoscope. Only a small amount of tissue is necessary to relieve the obstruction. Another type which is ideal and which has been brought out nicely by Dr. Kretschmer and Dr. Corbus is that of either type of the middle lobe, the two definitely known types of the middle lobe, true and so-called subcervical, middle lobe. It is ideal in every respect for this procedure, understanding, of course, when this is being done you may be leaving a nucleus for further progress in the laterals. I believe it is quite generally understood in the etiology of the lateral lobe hypertrophy, especially by those in Vienna, that they essentially begin in a sub-cervical group and develop from that point. This must be considered, nevertheless, that the obstruction at some time is essential to middle lobe hypertrophy and is ideal for this procedure. A moderate trilobular hypertrophy is ideal in most cases; however, that is a borderline type in some instances, depending upon the age and other factors which are distinctly individual.

As far as my experience is concerned and the experience of others who have had much experience in this connection, there is a very definite doubtful group; that is the large trilobulars and the definitely intra-urethral laterals. The last group mentioned is very difficult technically; frequently occurs in young individuals and comes without previous symptoms, with acute urinary retention. When we see those in that

group from fifty-five to sixty-five, it is very difficult to get out sufficient tissue and it is so typically ideal for any type of prostatectomy, that I would put that group in practically every instance, unless there be some definite contradiction, for total prostatectomy and not resection.

I would put into the prostatectomy group all those with very large trilobular prostates whose general condition would warrant prostatectomy. If it is necessary to sit down and take so much time, even multiple resections, two, three, four, or five, to get sufficient tissue, I believe in that case, if the condition warrants it, a prostatectomy should be done in the first place. In making selection of cases from these two doubtful groups, I would consider especially the question of infection. Infection, I believe, is the most common serious complication, and the one which must be most carefully watched preoperatively. The point has been stressed that these people must be prepared the same as for general surgery. I would direct your special attention at this point to infection within the prostate. We all know that a case being prepared may have a little sepsis as it goes along.

After suprapubic cystostomies have been performed, or when a patient is being prepared by a catheter, in many cases there is an indication of infection within the prostate and sections of this would definitely show that to be the case. I would consider that in many instances if it is very definite it is a contraindication to resection and believe that should be an indication for either perineal or suprapubic prostatectomy.

In talking with Dr. Phifer some time ago concerning this particular subject, he demonstrated without any doubt whatsoever a mass of pus under the surgical capsule and between the fibrous capsule of the adenoma which was enucleated. There is no question of removing tissue and stopping bleeding and sealing up the lymphatics. It will likewise prevent proper draining of the infected gland.

Another indication where I think we should change from resection to prostatectomy is the thing mentioned before, degenerated areas of carcinoma in hypertrophied lobes. Histologic sections should be made of all the tissue and if there is any evidence of degenerated carcinoma, I believe that patient should at once be prostatectomized. The only hope for complete recovery, and that is about the only chance where we have a possibility for complete recovery in carcinoma.

The age of the individual is the thing that must be considered, I think, in any one of these groups of hypertrophy, whether small or relatively large. If it is a young individual with intra-urethral laterals a prostatectomy should be done. If it is an old individual with life expectancy of a few years, I believe that something less radical should be done, resection of tissue from the floor of the vesical neck which probably would be sufficiently lasting to serve his purpose.

How do we know when we have sufficient tissue? Certain studies have been made by men to prove this. We cystoscope them and see that things seem to be pretty fair clinically. It was left to Dr. Alcock of the

University of Iowa to present a unique method, a visual demonstration of determining when sufficient tissue had been removed. (Illustration with slides.) I believe this is a marked progress in the management of the prostate obstruction, vesical neck obstruction. I believe the maximum benefit has not yet been derived and will not be derived until we are sure about the recurrence proposition and time only will determine that and when we can get standardized groups of cases suitable for this procedure.

Eugene B. Perry (Chicago): Mr. Chairman, Members of the Society: I enjoyed Dr. Kretschmer's analysis of cases. It was very interesting.

Dr. Kretschmer noticed there was a discrepancy between the old figures for carcinoma and the figures that he has obtained from resected pieces. We have found the same discrepancy in our own experience with resected pieces. However, this discrepancy seems only apparent, for the physical examination or the manual resection or the autopsy discloses much more undeniable carcinoma. It may be that the apparent discrepancy is due to the fact that the tissue impinging on the urethra, which is removed, is benign tissue raised into a position of impingement by an underlying carcinomatous mass. Caulk of St. Louis has written that tissue removed trans-urethrally from the internal orifice is reliable for microscopic diagnosis in as high as 80 per cent. of malignancy cases. This I would seriously question in the earlier stages. I should like to ask Dr. Kretschmer in regard to the treatment of bladder carcinoma with the resectoscope.

I wish to draw Dr. Corbus' attention to the fact that when he is making a microscopic section of one of these resected specimens he is really on the distal side of his electrode and does not get the depth of his burn. The greatest coagulation occurs along the course of the current between the active wire electrode of the instrument and the inactive plate electrode on the patient's back. The tissue on the distal side of the electrode should be very much less coagulated. However, the amount of coagulation seems to be a very minor detail, except as it is effective in controlling hemorrhage.

It is well to call the attention of the general surgeon and practitioner to the fact that so-called prostatectomy by any method by which it is ordinarily done is truly just a resection. It is simply digital removal of a large amount of tissue from the region of the posterior urethra. The entire gland is not ordinarily taken out. After a so-called prostatectomy there may be a recurrence of the hypertrophied enlargement from the remaining tissue. The only complete prostatectomy is the one described by Young for carcinoma, in which the prostate and capsule are entirely removed with the seminal vesicles and prostatic urethra, en masse. The bladder is then brought down and joined to the urethra. Consequently the term prostatectomy as applied to the usual operation is a misnomer, just as truly as thyroidectomy is a misnomer, because thyroidectomy is not a complete removal of the thyroid. Neither one is a complete anatomical removal of the offending gland.

We have heard of the benefits accruing to the patient

of this trans-urethral removal of tissue impinging upon the posterior urethra. Not much has been said (except by Dr. Culver, which I was very glad to hear) about the difficult technique of the operation nor of the skill and training required of the operator. It is really a most difficult, technical, tedious procedure. It requires a great deal of experience and training. The rapid consecutive improvement in the mortality and morbidity rate shown by Alcock in Iowa in each succeeding twenty-five cases of his series shows the result of the accumulation of skill and experience.

The speakers have pointed out the value of accurate, meticulous pre-operative preparation. They could also have drawn out the necessity for the accurate, careful, post-operative management. Both are just as important in this type of operation as in the old prostatectomy. Prostatectomy, as it was usually done, meant the digital removal of a bit of tissue about the posterior urethra. When the patient was properly prepared and the process was done digitally by the open operation, with due respect for hemorrhage and some of the neighboring structures, the occasional operator was frequently able to get good to fair results. The trans-urethral procedure is a very tedious, technical one, and requires training and experience in the operation itself. In other words, it should not be attempted by any occasional operator, unless he is perfectly familiar with the pathology of the posterior urethra. The contra-indications for the operation undoubtedly diminish with the skill of the operator and his experience.

As to the mortality, we wish you would bear in mind that Dr. Kretschmer's mortality is very satisfying. When you consider that trans-urethral resection is used in cases that are desperate risks, in which the old open prostatectomy would be contra-indicated, a higher mortality could be expected. This operation, done by a competent operator on a properly prepared patient with careful post-operative treatment, is truly, in my opinion, the answer to an old man's prayer.

Charles McKenna (Chicago): To date, I have not written one line on prostatic resection. There are two factors to be taken into consideration. There are a great many machines on the market. One morning in the Cook County Hospital, I saw six men trying to sell one doctor a machine. It is another great invitation to induce the patient to have an operation because a great many patients and doctors as well believe that this operation is a question of a cystoscopy or a day in the hospital. That is not said with jest.

I have seen within the last two or three weeks doctors refer cases where they had already told the patient it was only a question of forty-eight hours. The removal of a portion of the prostate is a surgical operation and truly a surgical operation. There are two factors about which I want to speak. We work both at the County Hospital and Research Hospital where we have plenty of material, yet I have done less than 100 resections; that means we are doing a great many removals other ways.

I want to say a word about hemorrhage. We have had no trouble with hemorrhage and I have had only

two or three cases that had any hemorrhage at all afterward, even bleeding. We found early that in controlling hemorrhage it is not so much in dealing with the prostate proper as it is in dealing with that portion of the prostate where the mucosa is attached both anteriorly and posteriorly. I think you can all visualize that when one applies the resector to the posterior portion of the prostate and severs the posterior mucosa, the mucosa becomes detached from the prostate and leaves a bleeding margin which cannot be seen easily. The prostate tissue proper can be seen and the hemorrhage controlled by turning on the coagulator. When you cut the anterior mucosa, and by that I mean the mucosa next to the posterior urethra, it too becomes detached and falls away from the prostate bed. Thus, one may say that most of the danger is confined to the mucosa and not to the prostate gland proper. That is probably why we have to deal with postoperative hemorrhage because we cannot see the bladder while the coagulation is going on. I have had occasion to see such a case suprapubically after a resection.

I think it would be a valuable asset to the organization if we had more reports concerning the postoperative results several months after resection has been done. We have opened suprapubically three cases where the patient was complaining of difficulty with urination following resection. In all three we found a pinpoint opening from the bladder into the posterior urethra. This is easily explained. When you consider that the prostate has three lobes, if the median bar is resected two lateral lobes are left. If the operator decides to take off a section from the lateral lobes, it is easy enough to see that with the middle lobe out, the two lateral lobes will collapse and the resection has made it possible to get a complete union of both lateral lobes. So the patient is really worse off than when he started. I think we should all recognize that it is important when we do resect the lateral lobes to do it sufficiently so that this collapse cannot take place.

In my opinion any operation on the prostate or bladder is a major one and the patients should be prepared for resection just as carefully as for suprapubic or perineal prostatectomy. The postoperative care likewise should be as carefully carried out. I do not think prostatic resection is a minor procedure.

Dr. Kretschmer (closing the discussion): Mr. Chairman, I wish to thank the members for their generous discussion. In answer to the question about the temperature reactions: The cases we put down as cases of pyelonephritis were the patients who had a high temperature, severe pain in the back and tenderness in the kidney area, upon palpation, or pain upon fist percussion. In the large majority of cases the fever was of short duration.

Whether the fever in the remaining cases was due to pyelonephritis, or due to the mere passing of the resectoscope, or whether it was due to stirring up infection in the prostate, I am unable to say.

Dr. Culver mentioned the cases in which the removed prostate showed the presence of miliary abscesses. I am sure we have all seen this type of lesion, probably quite frequently when the removed prostate was opened after its removal.

I think it is just in this type of cases that severe chills and fever follow instrumentation. Many patients, as you will know, who present themselves with a clear urine, often develop chills and fever after simple instrumentation, such as the passage of a sound. I believe these instrumental reactions are primarily due to the fact that the instrumentation stirs up latent infection in the prostate. In other words, I think many of the reactions are prostatic in origin and not renal.

Dr. Culver also stressed the question about the permanency of the results. I believe this question can only be answered with the passing of time. Should there be recurrence, I can see no objections to doing a second resection.

Dr. Corbus stressed the point about selecting the cases. In many of our cases we had no choice in this matter. In the paper I referred to, the cases in whom no other procedure can have been done, I mean a major surgical operation; I cited the patient who had a blood pressure of 260, the many patients with attacks of coronary occlusion and angina pectoris, the patients with hemiplegia, and the patient with severe broken compensation who had fluid in the pericardium, both plural cavities and abdomen, edema of the scrotum, penis and lower extremities.

I agree with Dr. Culver that the patient with carcinoma of the prostate is an ideal case for resection. This method has served me very well in three types of cases. First, in the patient who is wearing a suprapubic tube, resection allows removal of the tube, a great convenience I am sure. Second, the patient who has had a prostatectomy for a carcinoma who again, due to a recurrence, is obliged to use the catheter. And third, the patient who comes without having had a surgical operation.

Regarding Dr. Perry's question about carcinoma. In the average patient, as he comes to the urologist, there is no difficulty in the recognition of carcinoma of the prostate by means of a careful rectal examination. Then, too, careful histological studies are made in each case.

I am in complete agreement with Dr. McKenna that this is not a simple easy procedure, and I feel it is extremely unfortunate that the idea seems to prevail that this is an office procedure that may be carried out between trains. I also agree with him that enough tissue must be removed to completely relieve the obstruction.

Dr. Corbus (closing the discussion): I want to thank the gentlemen for the discussion. It is rare that we have so many gentlemen present at one time who are experienced in trans-urethral resection. I think this symposium has brought out a great deal in regard to

the indications and contraindications, and the sequelae following resections.

Doctor Perry asked me about the depth of the burn that is directly under the tissue removed by resector. Experiments show that the spark gap current does penetrate deeper than that which is excised but this is not true of the radio tube, and this is the current that I prefer to use.

I have nothing further to add except this. If I had a prostatic who was a veritable derelict and who was not a good risk for a suprapubic operation, I would not consider him a safe risk for a trans-urethral resection. I have several old men, one who came to the hospital recently with a gangrenous foot. Suprapubic drainage was performed. He came back and had his leg taken off and now I am going to subject him to a suprapubic prostatectomy. I have never been in a hurry with any surgical procedure until I had my patient physically as sound as I could get him. I would prefer to send him home for six or eight months and leave a suprapubic drain in, and leave him at home until his heart was in good condition, and until he could at least walk around the block by himself. I think we should be careful in preparing our cases for operation no matter what procedure is adopted.

THE PATHOLOGICAL AND BIOCHEMICAL CHANGES IN PAGET'S DISEASE*

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The credit for describing osteitis deformans as an entity has been given to Sir James Paget¹ who in 1876 presented to the Medico-Chirurgical Society of London a paper "on chronic inflammation of the bones" with a summary of five cases. Among these was one reported by Wilks² 5 years previously. He had described it as "osteoporosis or spongy hypertrophy of the bones" and his is probably the first clinical picture of this disease recorded in the English language.

We wish to present comparative studies of the bio-chemical changes in osteitis deformans and those associated with hyperparathyroidism. This study has been occasioned by the controversy in recent literature regarding a possible common etiology for the two diseases. The comparison is based on the calcium and phosphorus content of

the blood serum and the calcium excreted by way of the urine. As recently pointed out by one of us,³ "the only definite test for parathyroid



Fig. 1. Photograph of Case L. B. showing the anterior and lateral bowing of the femurs.

gland hyperfunction is the calcium metabolism study and the demonstration of a negative calcium balance with an excessive calcium excretion in the urine." The high blood calcium in generalized osteitis fibrosa is in sharp contrast to



Fig. 2. Photomicrograph of parathyroid gland removed at autopsy from man, age 60, with Paget's Disease of 20 years standing.

the usual normal figure in Paget's disease while the ratio of the serum phosphorus is reversed.

This contrast is best shown in 7 cases of gen-

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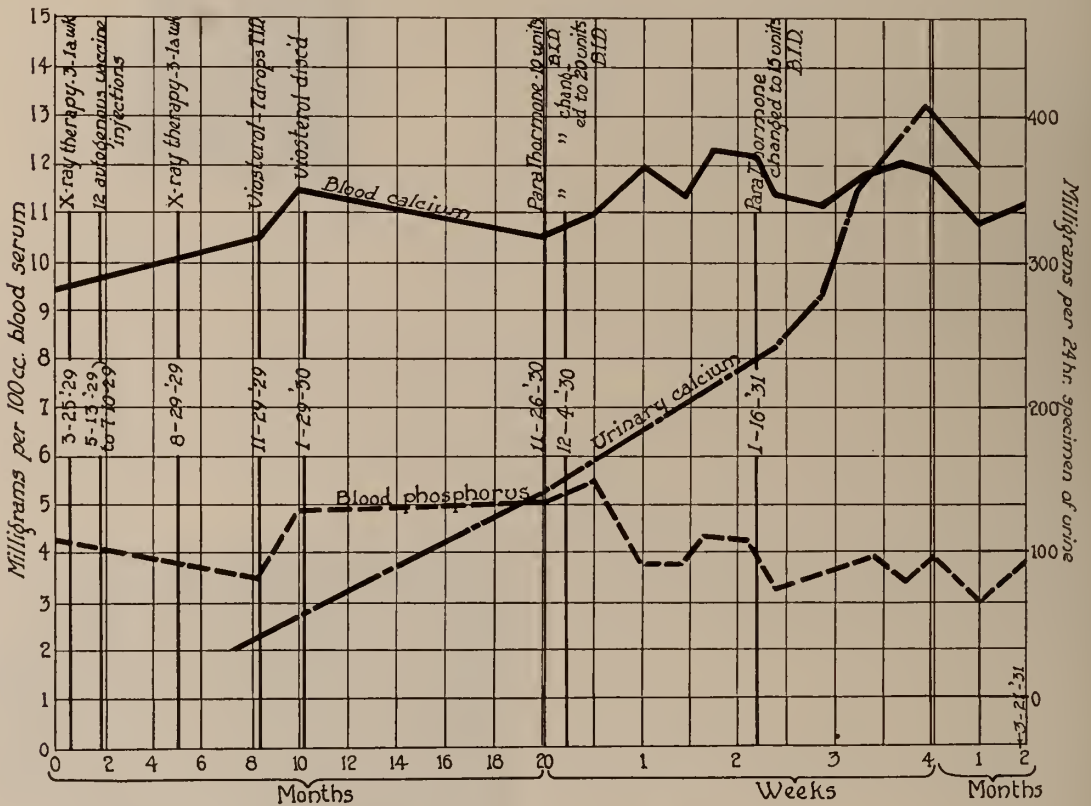
eralized osteitis fibrosa reported by Compere,⁴ Hunter,⁵ and Boyd, Milgram, and Stearns.⁶ In these cases the serum calcium ranged from 12 to 21 mgm. per 100 cc. of blood and the average was almost twice that found in each of seven cases of Paget's disease and seven cases of localized osteitis fibrosa studied in the University of Chicago Clinics. In the last two conditions all of the blood calcium determinations were within the low limits of normal. In generalized osteitis fibrosa the serum inorganic phosphates ranged from 1.2 to 3.2 mgm. per cent. while the

male walking with a peculiar slow shuffling gait with the thighs and feet rotated outward. (See Fig. 1). They could be rotated inward about 30° with some difficulty. There was marked bowing of both thighs, more so on the right.

The white blood count was 5,400, with 70% polymorphonuclear leukocytes, 24% lymphocytes and 6% transitional cells. The erythrocytes numbered 3,200,000. Urine examination was negative. Blood Wassermann and Kahn examinations were negative, and the basal metabolic rate was - 4.

Roentgenograms revealed marked anterior and lateral bowing of the femoral shaft with the cortex grossly thickened and encroaching on the medullary canal.

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other two were 3.5 to 5.5 mgm. per cent. The higher figures were in cases of young children. The phosphorus ratio is thus reversed.

Case History: L. B., aged 57 years, male, came to the University of Chicago Clinics in March, 1929, complaining of pain in the lumbar region and bowing of the thighs of 20 years' duration. The symptoms had begun with mild pain in the low back and progressed until he had difficulty in walking or forward bending.

Physical examination revealed a middle aged white

Both trochanters had a cystic appearance and the ischial tuberosity was involved. The low dorsal and lumbar spinal regions and entire pelvis were involved with thickening, broadening and irregularly increased density of the bones.

He was given x-ray therapy, autogenous vaccines, viosterol and parathormone in succession. During this 2½ years his blood calcium rose slightly and the phosphorus level fell off a little, but all the determinations were within the range of normal. The striking feature was the urinary calcium. It was only 30 mgm. per 24

hours before treatment. The normal average is about 180 mgm. per 24 hours as reported by Bauer, Albright and Aub⁷ in a large series of cases. This suggests the positive calcium balance so often found in Paget's disease in cases reported by DeCosta,⁸ Van Hazel and Andrews,⁹ and Rabinowich.¹⁰ This is in sharp contrast to the marked calcinuria found in generalized osteitis fibrosa now thought to be due to hyperparathyroidism. The excretion of urinary calcium increased to 140 mgm. after 2 months of viosterol and then rose to 430 mgm. per 24 hours after 4 weeks of parathormone.

The true value of this treatment is difficult to estimate although there was some symptomatic improvement. Zimmer¹¹ has reported a case with clinical and roentgenological improvement following parathormone therapy.

The calcium balance in generalized osteitis fibrosa is definitely negative. The case of a woman, aged 59 years, with generalized osteitis fibrosa and an adenoma of one parathyroid gland,



Fig. 3. The tibia and femur of a man, age 60, with Paget's disease for 20 years.

proved by operation, was recently reported by one of us.⁴ Metabolic studies over a period of a week revealed a definite negative calcium balance. This negative calcium balance due to an excessive excretion of calcium by way of the kidneys is a characteristic finding in hyperparathyroidism.

A white male with Paget's disease of 20 years standing with typical x-ray findings recently came to autopsy in this clinic. None of the parathyroid glands were found to be enlarged. The microscopic sections (See Fig. 2) showed the cellular elements quite compact, many fat cells and foam cells, and a few acini could be found. This microscopic picture was that of the normal parathyroid gland as described by Erdheim and Biedl.¹²

The patient's bones were examined and there was involvement of both femora and tibiae. (See

Fig. 3.) The bones were bowed and the cortex was thickened ranging from 1 to 2 cm. The bones were very heavy. The medullary canal

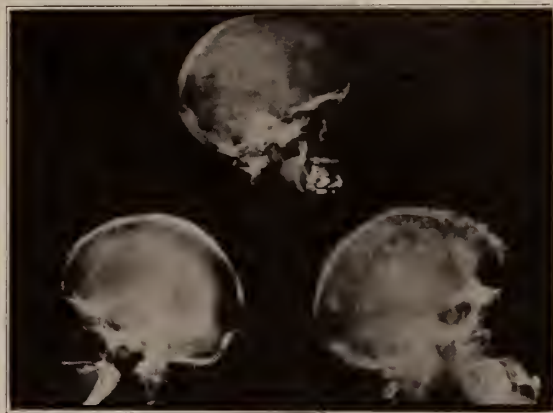


Fig. 4. At the top is the normal skull of a woman, age 52. Below on the left is a case of generalized osteitis fibrosa with a mottled appearance of the bones of the dome due to absorption. On the right is a case of Paget's disease showing thickening of the bones of the calvarium and many spherical areas of increased density.

was narrowed and the bone marrow contained an unusual amount of fat and fibrous tissue. There was a marked coxa vara in both hips due to a loss of tensile strength.

The x-ray findings of the skulls in these two conditions are shown in Fig. 4. In a case of generalized osteitis fibrosa in a woman, age 59, previously mentioned there were definite small rounded areas of absorption in the dome of the calvarium resulting in a mottled appearance

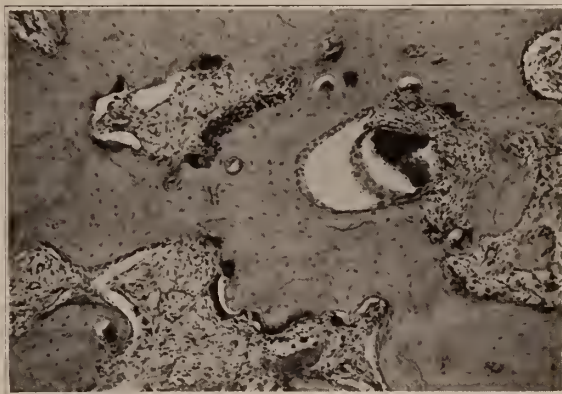


Fig. 5. Microscopic section of a biopsy of the tibia in a man age 60 with pain in this region for 15 years.

quite typical of this condition. When the skull in Paget's disease is involved the roentgenograms show thickening of the bones of the dome with

Table 1. Résumé of nine cases studied in the University of Chicago Clinics

CASE	DATE	AGE	SEX	SYMPTOMS AND DURATION	BONES INVOLVED	THERAPY	BLOOD Ca AND P IN MGM /100 CC.				REMARKS
							BEFORE MEDICATION		AFTER MEDICATION		
							Ca	P	Ca	P	
W.B.	3-27-29	54	M	Pain in leg, bowing of tibia, 8 years	Skull, left femur, tibia	X-ray, 2 series of 3 each	8.97	5.71	8.93	4.16	Mitral stenosis 5 yrs. Increase local heat. L. tibia 3.6° (96° F)
C.S.	1-10-29	53	M	Pain in leg, low back, bowing tibia 20 years	Generalized	X-ray, 1 series of 3	8.99	3.82	11.62	5.4	Weak and nervous 2 yrs. B. M. R. + 42. Increased local heat. L. tibia $2\frac{1}{2}^{\circ}$ ($96\frac{1}{2}^{\circ}$ F)
L.B.	3-13-29	57	M	Pain in low back and legs 20 years. Bowing of thighs 4 years	Generalized	X-ray 2 series autogenous vaccine. Viosterol 2 mo. Parathormone 9 mo.	9.54	4.26	12.2	3.75	One testis removed, age 37, for tuberculosis (?)
O.B.	1-18-29	64	M	Pain in right thigh 10 years and limp for 6 months	Pelvis and femurs	Parathormone units 15, B.I.D.	10.54	4.02	11.8	3.6	Mild diabetic for years
G.B.	4-5-31	59	M	Pain and swelling left leg 15 years gradually increasing	Left tibia		11.5	5.0			Decompression. Osteotomy L. tibia 12-24-32 some relief of pain
B.B.	10-7-29	55	F	Pain in low back, 1. leg, bowing left femur, 20 years	Left femur	X-ray, 10 treatments over 10 months	10.65	4.7	11.5	6.1	B. M. R. -2
E.H.	2-25-31	59	M	Swelling left forearm 4 years bowing tibia 2 years. Pain right heel one year	Pelvis, femur, tibia, radius, left	Parathormone 15 units, B. I. D. for 2 weeks	10.1	3.56	11.0	3.7	B. M. R. -9
F.F.	11-30-28	67	F	Pain, bowing right thigh with limp 10 years	Right femur	292 1/75 grain phos. pills. 1 series X-ray (3)	9.4	5.1			About $1\frac{3}{4}''$ shortening in 1928. $2\frac{3}{4}''$ shortening 1932
H.C.	6-7-32	59	M	Stiffness in legs 7 years. Pain in tibias 2 years	Skull, pelvis, femurs		10.9	2.4			

resulting increase in circumference. There are often many spherical areas of increased density. In many instances in Paget's disease the skull is not involved at all, while in roentgenograms of all cases of hyperparathyroidism which we have studied or reviewed this characteristic mottling of the calvarium has been noted.

A white male, aged 60 years, came in complaining of increasing pain and swelling in the left leg of 15 years duration. X-ray and biochemical studies confirmed the diagnosis of Paget's disease and a biopsy of the tibia was also done. The microscopic section (See Fig. 5) shows the trabeculae widened and thickened. There are many giant cells and the old bone is undergoing lacunar absorption. There are several areas of large, deep staining nuclei outlined on one side by a row of osteoblasts and on the other by an irregular serrated border. Thus we see bone destruction and new bone formation going on simultaneously. This is typical of Paget's disease with new bone formation greatly in excess of bone absorption while in generalized

osteitis fibrosa the bone absorption is the predominant feature.

A résumé of nine cases of Paget's disease studied in the University of Chicago Clinics during the past 3 years is presented (See Table 1). The ages range from 53 to 67 which confirms the impression that osteitis deformans is a disease of late adult life. Each of the cases had pain in the low back or lower extremities. The calvarium was involved in only 4 of these cases. Various kinds of therapy were used but it is difficult to estimate the value of any of them. The average blood serum calcium was slightly below normal and the blood phosphorus slightly above before medication was begun. There was a slight rise in calcium and fall in phosphorus after viosterol or parathormone therapy was instituted.

Conclusions. There is no evidence that Paget's disease is caused by hyperparathyroidism. Biochemically it is characterized by a normal serum calcium and inorganic phosphate content of the blood; the calcium balance in the chronic phase

is markedly positive and the output of urinary calcium is very low. The parathyroid glands are usually found to be normal grossly and microscopically. In more than 40 cases of Paget's disease examined at autopsy by Maresch,¹³ a tumor of the parathyroid could be found.

Generalized osteitis fibrosa on the other hand exhibits many opposites. There is a high serum calcium content, low plasma phosphates, marked increase in the urinary calcium and a negative calcium balance. In addition, a definite tumor of the parathyroid gland has always been demonstrated at operation or necropsy and removal of the tumor has resulted in improvement in symptoms and a return of blood chemistry toward normal in more than forty cases reported.

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DISCUSSION

Dr. Vito Witting, Champaign: The paper we just heard is very clear, the information definite. In Paget's disease there are no significant changes in the parathyroid glands and no changes in the calcium metabolism and inorganic phosphorous in blood serum in the direction of hyperparathyroidism. Therefore, the suggestion advanced that an intimate relation exists between osteitis fibrosa cystica and Paget's disease is not warranted. Indeed this stand has been taken by anatomists on histopathological grounds and a common name has been forged for the two diseases "osteodystrophia fibrosa" as the fibrous changes in the bones are quite similar. However, Schmorl lately has been able to point out fundamental differences also in the histological picture. From a clinical, roentgenological and metabolic standpoint the two diseases are far apart. Osteitis fibrosa cystica after all is a generalized disease, all the skeleton being affected. No case has been described yet as being of Paget's disease in which every bone in the skeleton was affected. In osteitis fibrosa the osteoporosis is the main feature, the cystic changes may be lacking. The diagnosis can be suggested by the x-ray findings on account of the osteoporosis which is quite characteristic in the skull as can be seen very plainly in one of the roentgenograms presented by Dr. Jerome and which takes a peculiar appearance at the metaphyses of the long bones and in the phalanges whose contour is frayed due to subperiosteal absorption as pointed out by Dr. J. D. Camp of the Mayo Clinic. In Paget's as justly pointed out by Dr. Jerome we often have a periosteal apposition of bone which largely accounts for the increase in thickness of some of the affected bones so helpful in the differential diagnosis with osteoplastic metastases. In osteitis fibrosa cystica this finding is not present except in some cases at the site of a healed pathologic fracture. Following the suggestion of Snapper, a few years ago a surgeon took out one and in a second case two parathyroid glands from two patients affected by Paget's disease. Roentgenological, clinical and metabolic studies of the cases after operation for a sufficient length of time failed to show any changes in the course of the disease; which occurrence is quite at variance with the remarkable recoveries after removal of parathyroids or parathyroid adenomas in osteitis fibrosa cystica. I compliment Dr. Jerome for his exhaustive and many sided study and for bringing up further evidence that the two diseases are not related in the way it has been suggested; which is important not only from an academic standpoint but also for its therapeutic implications.

MENTAL HEALTH IN THE HOME*

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The "home" in the sense of our discussion to day may be viewed as a life situation in which a man and woman have voluntarily placed themselves, because of a biological urge, as the result of which urge children are born, to be conditioned in their turn by the numberless stimuli arising out of this situation—a situation which they themselves materially modify as time goes on.

Home is a name for an interrelated group of the most fundamental experiences of life, the combined effect of which is vital for the child, because he is in a plastic state, except in so far as he may be the victim of some disorder, such as feeble-mindedness, dwarfism, hemophilia, early rickets, encephalitis, infantile paralysis, glandular, dysfunction, etc.

It is also a vital situation for the parents, because they are, to begin with, at least, still somewhat plastic. Their relationship to one another and to their children, calls forth concealed weaknesses, as well as potential resources. It encourages self-sacrifice and various other sublimations, because a fundamental mechanism in home life is the identification of the child as an extension of the parents' own selves.

However, *parental affection alone does not insure a good home. Sentiment is not a substitute for sense in making a home.* Nor can sense be divorced from sentiment as the Bolsheviks would do with an institutional method of raising children.

Feeling is paramount in our lives, no matter how we live them. The astronomer at his telescope and Michael Angelo painting his murals, are brothers under the skin. Feelings dominate us. There is no escape, except by learning to direct our more primitive desires toward ends which are accepted as lawful by the group as a whole. For example: The old time privateer, with his letters of marque, becomes today the financier, who keeps just within the law, a comparison now more readily appreciated than it would formerly have been. And, reversing the illustration, bear in mind that the "Apaches"

of Paris, made good as soldiers, because war gave vent to their primitive urges.

Now, granting there are children in the home, how, in our humble opinion, ought they to be affected by their environment? *Everyone will agree that children are, to begin with, supreme egoists and that the business of the home is to socialize them, to teach them the value of behaving according to the standards of the group.*

Obviously, however, "the standards of the group" may cover various sub-standards of morality as they exist within the sub-group to which the particular home in question belongs. We have seen in the past fifteen years a marked (though possibly only a superficial) change in youthful behavior, the assertion of alleged independence of thought and action, as the result of changing attitudes toward the conventions of the older generation, together with impatience of discipline—in the widest sense of the term.

These attitudes, however, may well be within the pale of the behavior of certain groups of parents, who are themselves accepted by the larger group in which they live. By and large, youth does conform to standards. The inclination is present in spite of the denial. There are probably no more standardized products in America today than the third or fourth year fratman and his sorority sister.

Gradually, then, and even before diapers are removed, the child learns to behave like a human being. Unfortunately, however, to behave like a human being does not imply that one "trails clouds of glory" behind him. One may easily be so foolishly human as to epitomize the thought and feeling of an entire bygone epoch. Witness the 20th century derisive use of the terms *mid-Victorian* and *Puritanical*. Don Quixote was "a beloved fool" because he had lived just a little too long, had lingered just a little too far behind the thought of his group as a whole. Contrari-wise, the foolishness of one age, or even of a single decade, becomes the wisdom of the next. The once ridiculed cry of the anguished mother "*I did not raise my boy to be a soldier!*" is now accepted in America to be the sober wisdom of an after-the-war world.

We must admit that thus far in our study of this business of making a home, we have found that a simple biological urge has created a rather difficult situation, directly involving several in-

*Address given before the Women's Auxiliary of the Illinois State Medical Society at the Century of Progress Exposition, Oct. 11, 1933.

dividuals—and who knows how many others indirectly—in a series of important adaptations.

First, there are life readjustments to be made by both principals, the father and mother, with respect to one another. These involve three levels of emotional life; which, however, cannot be altogether separated, because they are more or less continuous.

The first level concerns the primary instincts of self-propagation and self-preservation.

The second level concerns the development of these primitive instincts into socialized activities, in so far as this man and woman were able to accomplish this in their own home life when they were children.

The third level concerns the manner in which they have accepted recognized ideals and sentiments as valid for themselves.

The second and third level adjustments of the parents to one another, involve educational backgrounds and habits of thought—so-called convictions. They concern religious and ethical concepts; small town loyalties, such as thriftiness and “folksy” interests; big town ideas, relative to social prominence, financial advancement and intensive pleasure seeking; cultural cravings for satisfaction in music, art and literature; national and racial sentiments, etc.

Without a community of interests upon this second level and some upon the third level, a decent American home cannot exist for long. On the lower level there can be only a peasant or coolie sort of life. It is evident, however, that there can be little hope of an exact dovetailing of all lines of thought and sentiment on the part of any two people. What we can hope for is that *some* major interests and ideals will be held in common, and the remainder sympathized with, or viewed, at least with kindly toleration.

With the advent of children, the scene changes; new forces go immediately to work, such as the mother's reaction to:

Possible poor health, and impairment of personal appearance.

Closer confinement to the house.

Loss of regular occupation, if she has been a business woman.

Responsibility for the children's care.

The father's divided attention and affection.

And then we have, to top this off, not only the father's reaction to his own added responsibili-

ties, but also his reaction to the mother's reactions.

Finally, as the children develop personalities of their own, we have to consider the parents' individual reactions to the children's reaction to the parents' attitude toward them and to the parents' behavior toward one another, as they, the parents, are influenced by this entire situation, *etc., ad. lib.* The situation finally becomes so intricate that only a most competent analyst may hope to trace the threads in this complicated pattern of emotional life in the American home.

Now, having considered the possibilities of this intricate interplay of personality reactions, what part does mental health play in the success or failure of the experiment? We speak of the personality of the experimentalists as being important. What is the structure of the personality anyway?

Roughly speaking, the ego, like ancient Gaul, may be divided into three inter-related parts:

1. There is a *primitive self* possessed of great energy. Because it is so closely related to the protoplasm of our physical structure, it is dynamic, just as the wild animal is dynamic, always seeking satisfaction in the direction of the instincts of sex and self-preservation. These elemental cravings do not fit in with our socialization program for the child. The child being an egoist, struggles for the love of the father, or mother—according to its sex—and freely desires the death of those who thwart its various wishes. Sex interest is satisfied in perverse, distorted ways, according to varying experiences in the home.

2. Nevertheless the *social self* must be built up, and as it develops, the primitive self retreats from view—into the unconscious—under the pressure of the socialization process, but does not lose its tremendous energy endowment, nor its selfish desire to have things its own way. It continues throughout life to seek its own gratification. The business of building up a social self that can carry on the ordinary affairs of life according to the rules, customs, habits, of those about it, naturally cramps the style of the ego-centric primitive self—and may force the lid too tightly upon very potent, elemental forces.

3. Then in time there gradually develops a third portion, or level, of the self, known as the *super-self*, or *super-ego*, centered about ideals

based upon the various codes of ethics to which the developing child has been exposed.

However, it must be understood that in early life all three levels, or selves, are being affected simultaneously. The first few years of life—up to six or seven—are for this reason critical ones for the construction of the entire personality. Thus at home we may find queer notions, unhealthy ideas—charged with emotion—originating; *vide*:

A pathological attachment to mother or father.

Distorted notions to account for differences in sex characteristics.

Prudery—the feeling that sex is shameful.

Tantrums—imitations of parental misbehavior.

Undue interest in body functions and dysfunctions.

Too much fantasy life.

Fear and resentment as the result of nagging and domineering.

Distorted ideas of reward and punishment.

The entire procedure of child training, in and out of the home environment, when properly carried out, consists of a conversion of the primal energy possessed by the primitive self to social uses by the substitution of objectives which are in line with elemental cravings, but which are compatible with group standards. Thus the steps in the normal development of adult sexuality may be roughly stated as:

1. The utterly free pleasure-taking of intra-uterine life.
2. Self-love—Narcissism and exhibitionism.
3. Mother-love—the Oedipus complex.
4. Teacher-love. Transfer to another older member of the opposite sex—puppy-love.
5. Extra-marital relationships—frowned upon by Church and State.
6. Courtship—desire for one special woman.
7. Marriage—which may be postponed because of associated ideals demanding assured support for wife and children.
8. Gratification for the purpose of propagation, held by Church and State to be highest type of sex activity.
9. Various sublimations, such as becoming a teacher or nurse.
10. Ideals of service requiring self-denial and even celibacy.

A similar account might be given of the steps in the regulation of the instinct of self-preservation.

Such is the manner in which we may learn to behave like ordinary human beings. Unfortunately, the system seldom works smoothly to effect a perfect product, because at various steps in the process growth may be interrupted and stunting occur. As a matter of fact, *maturity is never*

achieved throughout the entire personality—though stunting may not always be apparent. Thus the Oedipus complex, a normal affair at one time in the youngster's life, may not be resolved into ordinary love desires. The man may marry, but does not adjust satisfactorily to the situation; or he remains a bachelor—*vide* the character of Charley in "*Strange Interlude*." Transference to the opposite sex may never be accomplished. Self-love — Narcissism — may never yield to interest in others. Such a person will remain at heart a-social, because everything he possesses is too highly prized. Homosexual interests may predominate. Ideals and sentiments upon which society thrives may not be actually assimilated to the personality in the form of a super-ego, but be viewed merely as the opinions of others, with no actual validity for one's own conduct, *vide* the psychopath. The dominated child may develop an inferiority feeling and may compensate by acting in the same way toward his own child later on.

Such are in brief the reasons why many people fail to behave well when subjected to extra stress and strain.

How now, in view of what has been said, shall parents conduct a home for the satisfactory socialization of children and their acquisition of fine ideals? Obviously the answer is that the parents themselves should have been brought up in just such a home. Some fortunate children have a set of parents who possess all of the fine attributes which go to make the individual who is 90 per cent. mentally well. (No one can possibly be 100 per cent.) If their children marry others as fortunate, the matter is attended to at once, barring unfortunate atavistic accidents.

But with things as they are and people marrying just as they please (and as they probably always will) we shall have to place our hope for a long time in the enlightenment of adults. In a general way this education may embody the knowledge that:

1. *Home* is a complex situation, charged with emotions and all their potentialities for good and evil.

2. Affection is a beautiful thing and a great aid to homemaking, but not a substitute for "mental-health sense."

3. A "good" home may be a bad home for a child because there is in it too much solicitude,

nagging, fretfulness, domineering, clinging motherhood, sex prudery, or intolerance.

4. There is always at work within us and our children the urge to seek immediate gratification of primitive cravings.

5. We should endeavor to substitute for these, other satisfactions which are socially acceptable—even though we have to become a policeman in order to handle a billy and a gun, or a nurse so that we may tell people just what they can and cannot do.

6. Awareness of our own weakness is the beginning of wisdom in home-making.

7. The child does not usually inherit faults of personality, but acquires them from those about it—and for the most part from the parents.

8. A child is as receptive to the influences about it as is a photographic plate to light, and as easily damaged by improper exposure.

9. There is evident in the growing and maturing human being a certain force, call it Nature, or Spirit, as you will, which directs development toward normality. The business of the home is to take care that as little as possible be said and done to interfere with this procedure, and that what is attempted by way of positive direction be carried out with intelligence, as well as with sentiment.

A PHYSICAL AND MENTAL HEALTH PROGRAM FOR A CUSTODIAL SCHOOL*

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The director of the State Department of Public Welfare requested that the writer make a survey of, and suggest corrections in, the physical and mental health programs at the St. Charles School for Boys, at St. Charles, Illinois. The significance of this study lies in the possibility of the application of certain of its findings to other similar institutions and even to those not corrective in character. The immediate purpose of the study was to discover what could be done to improve the general health conditions of the institution.

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The physical health of the inmates at that time was very well cared for. The physician in charge was a health officer and the incidence of illness was not great. Only a large number of mild respiratory infections and small traumata were noted. The whole purpose of a corrective institution should be to restore to mental health the offender but aside from the corrective aspects there were some features of a general mental health program which can be applied.

On the physical side the first step was to see that all the immunological techniques which were available were used. It was found that the boys were being vaccinated, were receiving typhoid and paratyphoid inoculations, and were being given diphtheria toxin-antitoxin routinely upon admission. At the time that this study was undertaken there had been a small epidemic of scarlet fever lasting for about two weeks, with about eighteen cases among the 800 boys. Shortly after this study was begun Dr. Dick gave a scarlet fever test to all of the inmates, and those who were found to be susceptible were given immunizing doses of the scarlet fever serum.

It was found, strangely enough, that for a number of years Wassermann tests had not been given to the boys routinely. Twenty-five cases of syphilis were disclosed by a complete testing program. These were all cryptic cases which would not be revealed either by the history or by the physical examination. All of the children were examined shortly after their admission to the school, usually during the first week. This admission examination consisted of a routine physical examination and urinalysis. If the chest findings were such as to require it, an x-ray of the chest was made and the sputum examined. An effort was made to sift out from the general run of boys those who had contagious diseases or who required physical correction. It was found, also, that the boys were generally in good organic condition but physically there was a tendency for them to be slightly underweight and to appear puny. The St. Charles School is equipped with a hospital and there was no hesitancy about calling in specialists when a consultation was needed, as for example, in eye, ear, nose and throat cases.

Beyond the individual health examinations the assistance of the state sanitary engineer was requested. It was found that the school had been

examined, particularly regarding the water supply, in 1926, and certain recommendations were made. We checked to see whether the suggestions which were made at that time had been carried out and found that they had been. However, as a special precaution samples of water were sent to the state sanitary engineer for examination and were found to be within normal limits except for a high mineral content. Arrangements were made so that the hydrant and water sources would be tested periodically.

One of the uses of the water was in a swimming pool. This was an antiquated installation and five days' use of it revealed the water to be so bad and the bacterial content so great that there was no need to make a count. There was no question but that a filtration or sterilization plant needed to be installed and a recommendation was made to this effect.

There were many personal hygiene features to be considered. It was suggested that periodic stool examinations be made of those who handled the food even though everyone was supposed to be immunized against typhoid fever. The barns were to be inspected and although it was found too expensive to run a certified dairy the cows were all tuberculin tested. A careful milking technique was urged as was also pasteurization of the milk. Over a number of years there have been no cases of illness which could be traced to the milk supply, which fact implies a satisfactory condition of that food.

Another matter which was held under consideration was the matter of isolation of new admissions. Theoretically, a three weeks' period of isolation is maintained, but since new admissions are few it frequently happens that new arrivals are placed with a group of boys who have been in isolation for some time and are therefore about to leave. For this reason the suggestion was made that the boys be kept in groups according to the day, or at least according to the week, of their admission, so that incoming boys would be segregated from those who had been in isolation two weeks. It was also recommended that if a case of contagious disease appeared in a group that group should be kept in isolation for the necessary length of time. If a contagious disease arose cottages were kept under quarantine except that adults were permitted to come and go. A recommenda-

tion was made that this exception be discontinued.

It is very difficult in a large school organized for corrective purposes to see that a regime of personal health is properly carried out. The food should be balanced, have proper vitamin content and be palatable. It has been this report's experience never to find such a regime adequately maintained in a large corrective school. In some schools, nevertheless, much more attention is given to it than in others, and the best that can be hoped for is a minimum of inmate labor in the kitchen combined with a maximum of training and experience on the part of the cook. It is necessary, too, to have proper kitchen equipment.

The clothing was conservative and found to be adequate. However, a mental health problem came up in the question of uniforming children. To a child in a corrective institution the uniform places the stamp of criminality upon him. In a military school, on the other hand, the uniform undoubtedly builds *esprit de corps* which one must approve whether he feels in sympathy with military aims or not. We stressed fresh air and sunshine and emphasis was laid upon the importance of every child's having at least eight hours sleep at night, and that those who were not robust should have a short rest period in the afternoon. It was suggested that careful supervision should be made of rest hours and that in a school of this kind there should be no undue effective excitement or disturbance during sleeping hours. It was urged that the majority of boys should spend some of their days actively in the open air and that free ventilation be maintained in the dormitory. It might be asked why it should be necessary to recommend such simple procedures. The answer to this is that the boys, if given much freedom, are likely to escape, and many supervising employees would prefer to infringe upon the rights of personal hygiene rather than to run the risk of losing a charge.

At the specific suggestion of the Director of the Department of Public Welfare an attempt was made to give every boy of the school 20 minutes of gymnasium work and 20 minutes of swimming each day. This was found to be very difficult but by a careful change of routine, quick adjustments of individual attitudes and by in-

creasing the size of the groups engaged in physical activity the problem was solved.

It may be asked what could be done on the mental hygiene side if the school was properly functioning. There is always some question as to what constitutes the proper functioning of a corrective institution. It was necessary in this case to decide that there are other elements beside the corrective and training features which could be studied and possibly improved. For the time being, the actual school and teaching service was not surveyed. The building was known to be properly constructed and the teachers were experienced in dealing with delinquent boys. A quick survey of the school building did not show any unhygienic conditions from the physical standpoint, although the highly standardized educational system in use is open here, as it is in many city schools, to question. One feature which was distinctly bad was the fact that during the boys' stay in school their idea of the world was circumscribed. They were learning nothing except what they could from their companions and from the school and had very little contact with the outside world. For this reason an arrangement was made for educational moving pictures to be shown each week. This means was also used to give the boys sex information. It was not considered advisable for the psychiatrist to give a lecture on sex alone, but good films on this subject were presented to the boys. There was a valid objection to this as a continued procedure, however, since funds were not available. Nevertheless the Y. M. C. A., various government and state departments and some universities furnish educational films at a nominal rate. These films were chosen with a three-fold purposes: 1, to arouse interest in choosing a future vocation; 2, to keep the boys entertained and therefore out of mischief; and 3, to act suggestively as a counter reagent to crime. A second mental health feature which was recommended was a system of socialization. Intramural games with emphasis on sportsmanship, clubs, and other types of group activities were encouraged. It was found that many of the employees had a particular interest which they were able to use in dealing with the boys and this was supplemented by Scouting and similar activities. It has, of course, taken a long time for all of these recommendations to be installed. There

are a few which have not yet developed after a period of almost two years, but even during the early months of the installation of these plans a change in the attitude of the boys could be noticed. The installation could be, by no means, complete, for volumes have been written on each one of the special topics mentioned above, and it would be optimistic to think that we had more than scratched the surface in our recommendations for a mental and physical health program; nevertheless the foregoing discussion may be of use to others who are considering similar public health activities.

DISCUSSION

Dr. S. B. Meyerson, St. Charles: The present health program at the St. Charles School for Boys is designed to meet the needs of a state institution administered by a layman, with a population of five hundred to six hundred delinquents of presumably adequate intelligence, ranging in ages from ten through seventeen years whose initial length of stay is usually from twelve to eighteen months.

The physical and mental health service functions as an autonomous unit under the direction of a psychiatrist who also does the medical work. He is assisted by a psychologist, two graduate nurses and a clinic manager. The dental work is done by a part time dentist. This unit also avails itself of the facilities in the medical and surgical specialties offered by the neighboring state institutions such as the Laboratory of the State Psychopathic Institute at Elgin, The Illinois Eye & Ear Infirmary and the Research and Educational Hospital in Chicago. This arrangement combines economy and efficiency of medical service in an era of financial depression.

All new admissions and recidivists are segregated in two separate receiving cottages during their first two weeks at St. Charles. Immediately following their admission, a complete physical examination, urine analysis, and an initial psychiatric interview and evaluation are made. During the course of the first two weeks, the following additional procedures are carried out: Vaccination against smallpox, blood Kahn and Wassermann reactions, Dick and Schick tests and immunization of susceptible patients, and any urgent psychiatric and medical treatment indicated is begun. As complete a social history as can be elicited by an interview with the boy is obtained and additional information relative to the boy's past history is requested from the community. An individual psychological examination, a group intelligence test, and a complete achievement test are given routinely to all admissions. Once or twice a week a staff composed of the managing officer, psychologist, school principal, director, director of home training and the psychiatrist reviews the material that has been obtained and makes recommendations concerning the medical treatment, school and vocational placement and such additional treatment and study as is deemed

necessary at this time. The boy is also called into the conference and if he expresses dissatisfaction with the recommendation of the staff and can give adequate reasons for his difference in choice for training and cottage placement than that made by the staff, the recommendation may be changed. Recommendations as to the probable necessary period of detention and conditions for the boy's release for parole are also made at this time.

Boys who become adjustment problems in the institution are referred to the Health Unit for further study. After reports on these cases are obtained from the institution personnel who come in daily contact with the boy, further psychological and psychiatric study is made and a report of our findings with recommendations is submitted to the managing officer.

In May, 1932, a thorough study was begun of all the mentally deficient inmates. All boys who have been found to have an intelligence quotient below sixty on repeated psychological examinations and all parole violators and institution behavior problems with intelligence quotients in the low seventies or below were interviewed by the psychiatrist, their records reviewed and such additional psychological and social material and medical data as was deemed necessary in a proper evaluation of each individual case was gathered. Of those studied, fifty-four were found to be uneducable defectives and were recommended for commitment to institutions for feeble-minded. Three of the inmates were found to be suffering from encephalitis and their further detention at this institution was considered inadvisable. Space does not permit to cite case histories as an illustration of the type of boys whose exclusion from a school for juvenile delinquents was felt advisable.

The health officer also advises the managing officer regarding matters of hygiene and sanitation and the recreation and physical education of the inmates.

A physical and mental health program is not complete without the element of organized play. That a lack of adequate recreational outlets frequently results in discontentment, emotional conflicts, a social behavior and criminality is universally conceded. Histories of the social backgrounds and conditioning of many of our boys support this theory. The instruction in various play activities as part of our program of re-education has as its objective to arouse the boys' interest and to give them an opportunity to become proficient and excel in certain recognized group activities so that they may continue to make use of these outlets in preference to antisocial behavior when they return to the community.

An athletic director who has two assistants is in charge of all organized play, which consists of outdoor play activities and the activities in the gymnasium and swimming pool. Life within the cottages is under the supervision of the supervisor of home training who sees that the cottages are provided with adequate play material and recreational facilities for the evening leisure hours and holidays. During the five school days of the week, from eight to ten academic classes go to the

gymnasium each day for organized play which consists of basketball, volley ball, baseball, indoor baseball and improvised games. This arrangement permits each boy regardless of size and age to participate in the program from thirty to forty-five minutes daily. Inter-cottage baseball and basketball are exceedingly popular. School teams are chosen from the cottage teams and a limited number of games are played with outside teams. Football is also a seasonable activity. "Games are played each year with the Wisconsin Industrial School of Waukesha."

The evening activities permit each boy on good behavior to go swimming once or twice a week and to enjoy a talking picture entertainment once each week. We also have a school band, an orchestra and vocal class who participate in the entertainment programs.

The swimming pool which had not been in use for many years was re-opened last June through the efforts and cooperation of the managing officer. The water entering the pool which flows continuously from a natural spring, is disinfected by chlorination and is tested daily at the institution laboratory for its content of free chlorine. A sample is also sent to Springfield at frequent intervals for a bacteriological examination. The pool is drained, cleaned and refilled with fresh water every two or three weeks. All boys, with few exceptions are permitted to use the pool during the entire year, once or twice a week for thirty minute periods. Each boy is required to take a shower bath, using soap and to walk through a pan containing a solution of chlorinated lime before he enters the pool. The rules of the pool are rigidly enforced, the boys being deprived of their next swim for violation of the rules or misconduct. Most of the boys react favorably to this plan and it is rare for a cottage to lose a swim. This is now the most popular form of recreation.

The medical work of the institution is done in a thirty bed hospital building which is equipped for dispensary service. About forty to fifty boys call at the dispensary daily for treatments. In an institution of this type, where nearly six hundred children come into daily contact with one another, the prevention and control of communicable diseases constitutes one of the most important problems of the medical officer. The physician has to be on constant guard against the dissemination of contagious and communicable diseases, by the early recognition and treatment of individual cases. In spite of the routine prophylactic measures employed, sporadic cases occasionally occur, particularly in new admissions, who either harbor a contagious disease or have been recently exposed to infection. It is gratifying to note that during the past twelve months, we have been practically free from acute communicable diseases. Out of a total of four hundred seventy-six patients confined in the hospital, there was only one case each of pneumonia, diphtheria, and scarlet fever. The diphtheria case was that of a new admission who had been in the institution only a few days, while the boy who developed scarlet fever had received a course of scarlet fever immunizing treatments five months previously (November, 1932). Although the rash and ex-

foliation were typical, he had only a mild angina and showed very little evidence of toxemia. The incidence of venereal diseases is probably not higher than that in the general population. During the year we have had nineteen cases of syphilis, probably all of which were congenital, and twenty-six of gonorrhea. All active gonorrhea cases are isolated in the hospital until a clinical cure is effected.

Special attention is given to boys suffering from malnutrition and those who have visual defects and chronic ear diseases. Sixty-one boys were furnished with glasses during the course of the past twelve months.

In the care and study of a group of adolescent delinquents, endocrine factors must not be overlooked. Although possible abnormalities of the gonads, pituitary, thymus, pancreas and adrenals should be considered and an attempt made to treat them, if discovered, hypersecretion of the thyroid with its associated increase of pressure of activity and nervous instability is perhaps outstanding in its frequent association with behavior disorders. Out of the five known cases of toxic goiter now in the institution with basal metabolic rates ranging from 19 to 49, thyroidectomies were performed on two. One of these, in addition to the classical symptoms of thyrotoxicosis, exophthalmos tremor, enlarged thyroid, tachycardia, palpitation, dyspnea, abdominal distress and nervous instability—had developed mental symptoms bordering a psychosis and attempted suicide on one occasion. This boy, who had been a patient in the hospital since the day of his admission, has shown an almost miraculous improvement in his physical and mental health following a thyroid operation. He is now carrying a full program of academic and vocational training without any signs of fatigue or irritability and should soon be able to resume his place in the community.

The great difference of the individual boys as to age, size, intelligence, abilities, interests, personality, social conditioning and delinquency careers makes the difficulty of any institutional program for their training and re-education apparent. Each boy must be treated according to his individual needs and differences. The necessity of a properly qualified health officer who is capable of combining and integrating the work of physician and psychiatrist and the importance of the cooperation of an intelligent managing officer and institution personnel in carrying out an efficient health program cannot be over-emphasized. As it has been effectively expressed by the St. Charles advisory council, it is the ultimate aim of the administration that the purpose of the institution as a whole be lifted from the level of punitive and custodial care (such as institutions of this type are generally considered), to the basis of scientific diagnosis and treatment.

Dr. Charles C. Rowley, Dixon: It is rather difficult to discuss these two papers in view of the fact that the authors haven't made any extravagant claims for their program. They simply stated the facts as they have tried to outline them in their own minds and to go ahead and do what they could with their program. It

seems to me, that our knowledge of hygiene, sanitation and medicine is so extensive that a program of physical care in the institution isn't a great problem, with two exceptions.

The first is to get the cooperation of the executive head. I well know that if you don't have that your program falls flat. And the second is to adjust the knowledge we all have of hygiene, sanitation and medicine to the physical structure of the institution and its environment.

If the executive head is medically minded, he will understand your purpose and he will cooperate and will see that the heads of various departments cooperate. If they don't do that, the patients do not benefit by the program. Quite often in these institutions, as you all know, the head is simply a man who has been of value to his party during the last election. He is not trained in the science of running an institution.

Dr. Selling mentioned the fact that many of these children are under weight. I wonder if that can't be explained by a couple of well known simple facts, one being that the average mental defective, and the average defective delinquent, is smaller and not up to par physically, in comparison to the normal. I think about 40 per cent. of the St. Charles population are under normal mentally. Another point is that these children have come through a recent emotional stress. They have gone through a series of delinquencies. They generally come from poor homes. They probably haven't been well fed or well taken care of, the personal hygiene at home has been neglected, and possibly they have been in jail for several days, or they have been in a detention home, or in foster homes where they have been neglected or abused, possibly, or in hospitals and clinics. These children are not happy; they have no feeling of personal security. Any of us will fight or lie or steal or sometimes even kill for that most precious possession, liberty, and you can hardly blame these children.

The problem of segregation must be considered in these institutions, and it is an impossibility in nine-tenths of them. You have to segregate as to age, physical size and strength, color, sex habits, duration of antisocial behavior, physical health and mental age. If you will find an institution in any State that is large enough to provide cottages for those various groups, and employes intelligent enough to carry out the program, I would like to know where it is.

There is not any mental health program which we can call the standard. One that works in this town would not work in Rockford and would not work in Chicago or elsewhere. There are so many elements in the community that have to be considered; your group controlling the program and your group to be controlled. Like the physical health program, the mental health program depends again largely on the attitude of the heads of departments, the head of the institution and the employes. If they are all sold on the program, everything is rosy. If they are jealous, if they think that it is high-brow stuff, that you are usurping undue authority, that it is a waste of money,

that a brother-in-law or two brothers-in-law ought to have jobs instead of you, you are out of luck.

The ordinary mental program depends first upon the cooperation of the community, represented by the charitable and social organizations in that community. Those organizations may be able to mould the environment so that it is suitable for the children in the group, and the adults as well. They may be able to establish parks, clubs or playgrounds, boy and girl scout movements, parent-teacher associations, etc.

Second, you must have a home in a mental health program, and the home must cooperate. You must get the parents and the relatives to cooperate. It is rather difficult to tell a fond mother that it is all her fault that this child has a behavior problem. It is possibly over-indulgence and possibly indifference on her part, and the grandmother and the grandfather, and the uncles and aunts, and so on.

Third, you must have a school and a good school. There again you have to get your teachers to cooperate, you have to get the teachers to give the right ideas, which I don't believe they have done, according to the previous paper.

Fourth, I feel you must have a church in the community.

In other words, I think we have to have four things in this work. First, the community environment; second, the home; third, the school; and fourth, the church. Maybe you could reverse it; I don't care; but you need all of them.

And, to me the success of a mental health program in an institution seems to rest largely on the ability to find proper substitutes for these four things, the school, the church, the home and a good neighborhood environment. Maybe a medical meeting isn't the proper place to talk about churches, I am not mentioning any denomination, but I do feel that, in order for a person to become a well-rounded, useful citizen in this country, he must have some church or at least some religious instruction. Possibly I am a Pollyanna. I had a friend, a psychologist, who came to me. He had a child of about four. He said, "Doctor, my little girl has asked me about God, and I don't know a thing about it. I don't know what to tell her." I feel that man needed some religion himself.

I think the personal qualifications of your mental health officer is of very great importance. If he is to succeed in the work, he must not let himself become angry or upset if patients or inmates lie to him. If I was locked in a cell, I would lie myself. If you are going to lose your temper and get angry and say, "You can go to" some place, "I will not have anybody lie to me," if you will just take stock of yourself, you will find that nine times out of ten the bad behavior of the child or person that aggravates you most is the very thing that in your own heart and soul bothers you most.

Dr. Lowell S. Selling, Chicago, (in closing): The most essential thing to the working out of any of these programs is cooperation. It is difficult to get that from lay superintendents so that we have been very fortunate

in having a program such as Dr. Meyerson has outlined. I still feel, and he does too, that there are many things that we could carry out in a school of this sort and that other schools could do even better, and I feel the factors were very nicely pointed out by Dr. Rowley which we have to look after in such a program.

HEALTH ENGINEERING*

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CHICAGO

The application of engineering principles to health protection has undergone a rapid development during the past few years. From the time of the ancient Romans, when great aqueducts were built to bring pure water from the mountains to the cities, until comparatively recently, health engineering was largely limited to housing, water supply and waste disposal.

Since the discovery of germs as factors in the production of certain diseases, water purification has been put upon a highly scientific basis. The development of modern methods of treating sewage accompanied the advance in guarding the safety of drinking water. The discovery that yellow fever and malaria were spread by mosquitoes gave the engineer another field of usefulness in preventing disease. The protection of milk against dangerous contamination has afforded the health engineer still another opportunity, in the design and supervision of pasteurizing and bottling machinery.

New building styles, involving towering skyscrapers and new materials, have presented new problems of supplying light, air and water, and removing sewage, garbage and foul air, which require engineering skill of a high order for their proper solution. Increasing congestion in urban centers has given the health engineer additional worries about city planning, zoning and overcrowding, while the use of machinery and radios in these densely populated centers has produced the increasingly difficult problem of noise control.

The smoke has been so unbearable in many areas that engineers have also been called upon to abate that menace to health. It seems that whatever there is in our environment, misman-

*Presented at the Annual Meeting of the Illinois State Medical Society, Section of Public Health and Hygiene, Peoria, May 17, 1933.

agement will create or aggravate a hazard to health. Very often the difficulty is of such nature that the engineering approach to the problem is the one most likely to afford relief. It is the preventive rather than the curative viewpoint.

One of the most recent advances has been in the field of air conditioning, producing, by mechanical means, any climate desired.

The engineer has now been called upon to enter industry and apply there the scientific principles which have proved successful in other fields. Industrial hazards to health are largely environmental in character. They involve toxic dust, gas and fumes in the air that is breathed, toxic solids and liquids that are handled and may be absorbed through the skin, bacteria, noise, vibration, electricity, light and short wave-length energy.

A few examples will illustrate. Lead or silica dust, carbon monoxide gas and chromic acid fumes are hazards in the air that workmen may breathe. Phosphorous, a solid, and benzol, a liquid, are familiar examples of these classes of hazardous materials, while anthrax is representative of the bacteria, especially associated with industrial dangers. The noise and vibration of punch presses have certain harmful effects, while bright lights, as produced in welding, may damage the eyes unless shielded.

The job of the health engineer is to determine the source of the dangers and how best to overcome them. In the case of poisonous materials, the approach depends upon one thing. The mode of entry of the poison into the body must be determined before preventive measures are worked out. Substances entering the body through the respiratory tract are gases, fumes and fine dust, which can be controlled by proper methods. Gases fall into four groups, each with its characteristic physiological reaction.

1. Asphyxiants may be of two kinds. One kind combines with the hemoglobin of the blood, or with tissues, in such a manner as to prevent the utilization of the oxygen in the air breathed. There are a large number that may be encountered, among which carbon monoxide and hydrocyanic acid are perhaps the best known. This kind we call chemical asphyxiants. The other kind (simple asphyxiants) in high concentration excludes oxygen in a mechanical manner, with-

out any marked physiological effect of its own. Nitrogen, helium, and hydrogen are examples of simple asphyxiants.

2. The second group may be called irritants, producing inflammation of the respiratory tract. Ammonia, sulphur dioxide and chlorine are familiar irritant gases.

3. The third group includes volatile drugs, which do not directly attack the lungs but which exert their anesthetic effects after they are absorbed into the blood. Methyl chloride, ethylene dichloride, nitrobenzene and carbon tetrachloride, are members of this group that are widely used in industry.

4. The fourth group comprises inorganic and organometallic materials which exert a poisonous effect after absorption. Mercury, hydrogen sulphide and tetraethyl lead, are typical of industrial poisons of this group.

The dusts and fumes are of greatly varying importance to health, depending upon their physiological effects. Some harmful ones cause fibrosis of the lungs, replacing elastic lung tissue with scar tissue. Dust containing silica and certain non-poisonous metals, has this effect and probably a slow acting toxic effect as well. Lead, arsenic, mercury and chromium dusts and fumes have a directly poisonous effect.

The health engineer deals with these gases, dusts and fumes by preventing their formation, as far as possible, and collecting them close to their point of origin, when they cannot be entirely prevented. Local exhaust systems draw these gases and dusts away from the breathing zone of the workers as fast as they are produced. They should be discharged with a due regard for the health and comfort of the neighborhood, for otherwise the hazard is only removed from a group of employees to harass another group of nearby residents.

Often, quite unexpected things result from unforeseen conditions. Dichlorodifluoromethane, a relatively non-toxic refrigerant, which has lately attained considerable prominence, may decompose in the presence of a flame, forming the dangerous wartime gas, phosgene. A carbon tetrachloride fire extinguisher, if used in an atmosphere poor in oxygen, may permit the formation of the same substance. The health engineer learns to recognize these possibilities and guard against them. Very often, prevention of

danger may be accomplished by changing from a hazardous substance to a safe one which will do the work required. Examples are the substitution of toluol, xylol and petroleum distillates in place of benzol, as a solvent in lacquers and enamels, and the change to lithophone or titanium oxide instead of lead in paints.

Presumably as research continues, many other toxic substances will be replaced by non-toxic ones. Unfortunately, the substitution process sometimes goes the other way, in the absence of the health engineer, creating a health hazard when none previously existed, or making an existing danger worse.

The change in the dry cleaning industry from using Stoddard's mixture, composed of various hydrocarbons, to carbon tetrachloride, had the effect of lowering fire insurance premiums and, therefore, the substitution was made. On the other hand, a definite health hazard was introduced, caused by breathing the vapors of the carbon tetrachloride, by the workmen. Then the engineer had to step into the breach and redesign the washers or tumblers, installing local exhaust systems, in order to protect the workers against the new danger.

The type of exhaust system to be employed depends largely upon the specific gravity of the poisonous material to be removed. Thus, a gas heavier than air, such as carbon tetrachloride, which naturally drops to the floor, should be removed by a downward exhaust, making use of its natural direction of movement to assist the mechanical devices.

In chromium plating, tiny droplets of chromic acid are thrown up into the air above the plating tanks by the bursting of bubbles of oxygen evolved at the anode. This spray must be kept out of the breathing zone of the workmen if nasal ulcers are to be prevented. This purpose is accomplished by placing exhaust openings at the sides of the plating tanks, which cause a downward current of air over the tanks to sweep the chromic acid into the exhaust system.

Now what becomes of these collected materials after they enter the ducts? Dust and fumes may be collected by cyclones, scrubbers, bags or cottrell precipitators—the latter making use of the attraction of opposite electric charges. Cyclones are the cone-shaped devices that one sees on top of factories. The air stream enters this

sort of collector in a tangential direction and the centrifugal force of the whirling motion flings the particles to the side, freeing the air of them before it leaves the cyclone.

Fumes of acids can be collected in a scrubber using water where they are soluble, or a neutralizing alkaline wash where ordinary water is not suitable. These scrubbers are frequently towers filled with bricks, coke or similar material, over which water trickles.

Gases and fumes of combustible nature, such as many organic solvents, are sometimes burned in the boilers, by blowing the mixture of air and fumes through the fire box. Where this is done, care must be used to prevent flashing back of the flame through the duct system, by installing suitable fire arrestors.

Bag systems are of many kinds. They have the disadvantage that as the pores of the bags become clogged with the collected materials, a back pressure is built up which reduces the volume of air handled by the exhaust system—this in turn reducing the air velocity at the exhaust opening which is depended upon to pick up the toxic materials. To combat this difficulty, mechanical shakers or compressed air blowers are often provided, to dislodge the particles and reopen the meshes of the bags. A recent installation of this kind of equipment in a brass smelter, for the purpose of collecting zinc oxide dust, has nearly paid for itself in two years' time by the value of zinc oxide recovered, besides abating a serious neighborhood nuisance.

Often it is not economically possible to build a collecting system that will entirely remove the hazard to health. Here it becomes necessary to supplement the exhaust system with protective masks, of which there are many kinds and varieties. A sand blaster working on castings in a booth may be fairly well protected by a local exhaust system, but the man cleaning the face of a building with a sand blast frequently must rely upon a mask for proper protection, both to his eyes and lungs. A spray booth may give adequate protection to a workman spraying automobile parts or furniture with enamels or lacquers having a toxic solvent, but the workman spraying the Hall of Science at the World's Fair cannot put it in a booth.

A notable development in recent times in masks, has been the production of direct pressure

masks supplied with air under pressure taken from a pure source. The control of the air pressure is in the hands of the workman himself, and the masks are so designed as to create a current of air across the inside of the goggles to prevent fogging.

The suppression of noise through better design of machinery has been another contribution of health engineers to the well being of workmen in various industries. Where vibrations are unavoidable, as in stamping and punching, much has been accomplished, and much more remains to be done in the provision of foundations which will absorb vibrations and prevent their transmission to structural members of the building, which may act as sounding boards.

Adequate lighting is of great importance in preventing fatigue and in avoiding accidents. Short wave length energy, whether it be in the form of cathode rays, such as x-rays, or in the form of radio-active emanations, such as one gets from radium and meso-thorium, are even more dangerous than the well known ultra violet rays, which are commonly encountered in oxy-acetylene welding. An example of the harm done by these forms of energy is the well known case of the luminous watch dial painters in New Jersey, some of whom were fatally poisoned as a result of moistening brushes with their lips while employing a meso-thorium luminous paint.

While these mechanical devices, such as exhaust systems, masks, goggles, collectors, spray booths, etc., are of tremendous value in protecting the health of workmen, the medical aspect of industrial health protection must not be neglected.

Frequent periodic examinations are essential to any well-balanced control program. These examinations must be made by a competent physician. The period between them depends upon the nature of the hazard, but in many cases they should be more frequent than is the custom today. For the more hazardous jobs there should be at least one a month. In certain cases monthly examinations for the detection of occupational disease are required by the State Law. Considerable progress has been made recently in securing the cooperation of employers in a better observance of the provisions of this statute.

In conclusion, permit me to say that while much has been done in the application of engi-

neering principles to the protection of health in industry, we have only scratched the surface as yet.

If we could only put into practice all that is known already about toxic materials and how to control them, there would be much less ill health and lost time among employees. This is no excuse for stopping research, however, because the time will never come when practice will catch up completely with theory and we should not mark time while waiting for this Utopia to be reached.

LABORATORY TESTS AND METHODS USEFUL AND NECESSARY IN IN- DUSTRIAL HYGIENE*

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We have been using instruments of precision in the diagnosis of communicable diseases for about fifty years. These exact methods have allowed us to build up a controlling mechanism for communicable diseases. Tinctorial tests for tuberculosis and gonorrhea are examples of these methods. Bacteriological cultural tests for diphtheria and typhoid fever can be used to illustrate another group of exact methods used in the control of communicable diseases. Serological methods have been employed for the diagnosis and control of syphilis, typhoid fever, undulant fever and tularemia. We have built around these laboratory methods a system of control and prevention of communicable diseases. Without these exact methods we would have made slower progress in sanitation and hygiene of man's environment.

The right of the State to inspect factories and exercise some control over the hygienic environment of workers was first established in Great Britain about one hundred years ago. This development was associated with the Labor Movement and also with the Public Health Movement in Great Britain. The Public Health Movement had as its primary object to guard the health of a population in such a way that they could increase in density and at the same time enjoy a falling

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death rate. This has been accomplished. Some of the most important problems at the present time are those associated with industrial hygiene.

The primary factor to consider in industrial hygiene is atmospheric pollution with gases or solids in suspension that are toxic to man. In addition to this, cutaneous or skin contamination by direct contact with material used in industry, also must be taken into consideration in industrial hygiene. But, primarily we are concerned with the prevention of atmospheric pollution. The rapid progress made in industry has been due to the rapid and persistent utilization of the research work performed in laboratories. The research work done in the field of medicine and its allied subjects usually requires time and a certain lag period before it is incorporated in the practice of medicine or any of its specialties. Industries promptly take over and incorporate new methods and new processes. This leads to a constant changing atmospheric environment around the worker. New products are constantly being formed by the machines and atmospheric pollution becomes an important problem in the preservation of the health of the worker.

The laboratory methods used to aid in the prevention of industrial intoxications are more chemical and physical in nature than those used in the control of communicable diseases which are primarily bacteriological in nature. The methods of determining atmospheric pollution concern themselves with the analyses of both the physical and the chemical status of foreign materials suspended in given air samples. The hazards of dust inhalation form one of the major problems in industrial hygiene. Dust, or physically suspended particles in the air need to be determined with the following physical and chemical points in mind, 1. the size of the particles, 2. the chemical composition, 3. the physical forms, and 4. the concentration.

A discussion of lead would be too involved to incorporate in the general treatment of industrial hygiene. The basic problem is absorption versus excretion. The McCord test based upon a stained preparation of a blood film, gives information of value in evaluating this equation. Further work needs to be done to substantiate Dr. McCord's ideas in this respect. A few preliminary observations made by the State Department of Public Health tend to support Dr. McCord's hypothesis.

We think it can be used as a method of preventing lead poisoning. Arsenic exists in the atmosphere in two forms, in a solid compound as well as in a gaseous state. One must remember that mercury vaporizes even at a temperature at which water freezes.

Industrialization has taken place so rapidly that it is impossible to expect the worker to gradually adapt himself to the atmospheric pollutions produced during certain processing methods. The combination of ventilation and efficient respirators or filters must be relied upon to protect the worker. The efficiency of both of these principles can be tested by laboratory methods. Silicosis has recently come to the fore in Illinois as an industrial hazard under certain conditions. In addition to the determination of suspended particles, mentioned above, the x-ray can be used to determine the degree of pneumoconiosis. Asbestosis is another example of an industrial hazard that is now occupying the attention of students of industrial hygiene. The examination of the sputum has been recently shown to be of value in the diagnosis of this condition.

The worker can be examined to see if he manifests any maladjustment to his industrial environment. This is a part of health supervision and does not in its strictest sense come within the scope of this paper. The various blood examinations of gaseous substances toxic to the hemopoietic system have been placed on a sound and reliable technical basis. But these methods tell us the relative degree of damage done to the worker. We are determining maladjustment due to contact with some toxic substance. The best approach to this problem is through preventing contact of the worker with a given irritant. The limits of concentration of many of the known toxic substances in the air are known. We have well established methods and apparatus for the quantitative determination of these substances. Examples could be cited, such as benzene and its derivatives, carbon disulphide, carbon monoxide, etc. The exact degree of atmospheric pollution can be easily determined; the same holds for the heavy metals, lead, mercury, arsenic, etc. The silica and related hazards can be handled in the same manner. We know the upper limit of sand dust a worker can breathe, beyond which he begins to deposit and accumulate the dust in his lungs.

We have sufficient knowledge of exact methods, that can be used in industrial hygiene to protect the worker, to be useful if they are properly applied. The problem now before us is to apply these various methods and determine their clinical value. Detailed discussion of any one or a number of these various methods would be out of place here. A list of references is attached which will give the various laboratory methods, in detail, that can be used in industrial hygiene. We have only attempted to outline a few of the fundamental principles to be followed. Further investigation is necessary in some of the fields but the greatest need is to conscientiously apply known and prescribed methods in industry in order to create a hygienic environment for the worker.

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DISCUSSION

Dr. C. O. Sappington, Chicago: I enjoyed very much Dr. Arnold's paper. I think that the methods used for estimating atmospheric pollution, many of which are now available, are not used to the extent they should be. Some years ago at a meeting of the American Public Health Association in Texas I made the statement in a paper that certainly the objective means for determining the extent or degree of atmospheric pollution had not as yet progressed to the same degree as similar means for controlling milk and water supplies and probably in many instances in regard to food supplies. I think that is still true. I think, for instance, that we are yet lacking in laboratory methods for the determination of atmospheric pollution which should be in general use. I agree with Dr. Arnold that it is entirely important that laboratory work must be developed more in the future in relation to industrial

hygiene. Many medicolegal cases are today settled erroneously because the physician does not have at his command exact knowledge which is, of course, always demanded by the courts bearing on the harmfulness or harmlessness of certain contaminations of the atmosphere created by industrial work. Here is an excellent chance for some foundation to spend some money to develop laboratory procedures through animal experimentation, which studies should be prosecuted scientifically in connection with chemists and physicians and laboratory workers as well as industrialists to determine what has been called the "threshold dose" of certain of these poisonous substances. That is information which at the present time we lack considerably and it is information which we must have if we are going to be very thorough in our preventive procedures. I have stressed this point in a number of papers recently but I think it is very important that money and personnel be devoted to this particular use.

A MEDICAL SOCIETY AND ITS SERVICE TO THE PUBLIC*

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CHICAGO

The medical profession is not selfish, in fact it is the one profession that seeks to do away with itself. It is forever seeking to lessen sickness and increase health. In discovering preventives of certain diseases, it has given health and wealth to the community at large. Widespread epidemics have become a thing of the past. Water and milk supplies have been purified and if the public would utilize all the knowledge that is now available, we would be living in Utopia.

Intelligent people should know that certain diseases can be prevented, but there are many who do not know and as a result we find children suffering from the ravages of diphtheria, scarred by smallpox, and entering school wholly unfit to accept the new responsibilities which fall upon them. It is encouraging that great lay organizations as the Federation of Women's Clubs and the Parent Teacher Associations are becoming actively interested in public health problems. With the interest of these mighty groups and the cooperation of the medical profession, certainly great achievements are possible. These women's organizations are a powerful educational force and we must not forget that each member

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has a vote and is therefore an influence for good or bad legislation.

Medical women should be an important cog in this great wheel of health activity—particularly with the women's groups. Medical women should belong to these lay organizations and take active instead of passive part in their work. Nothing is accomplished by sitting on the side lines and complaining of the way things are managed and of the lack of leadership, when one is not willing to give time to these endeavors.

If laymen are not guided and directed by the medical profession, they will secure their information through other sources. The Educational Committee believes that the physician, because of education, training and experience is particularly fitted for an important part in these health programs. Physicians should be the leaders and the authority for health measures in their own communities. They cannot afford to wait for lay organizations to come to them for advice and help. In some cases it is easier to go and offer good will and assistance if needed. No definite goal can ever be reached in working out these health measures if we offer no constructive policies.

Lay groups are going to continue in the health education field. Big business is making use of the health appeal. Look at the advertisements in our lay journals, on the bill boards, in the street cars, over the radio. Every product is advertised in its relation to health. Why? Because health is of interest to every individual reading those signs.

The public is becoming insistent in its search for knowledge which has a bearing upon the problems of individual and community health and it is of immediate concern to the medical profession how this knowledge is to be imparted to the public. Medicine need not apologize for offering information about the wonderful accomplishments of its members. The public is interested, but is going to be ignorant of these facts unless it is told. Show the people that you are concerned with the high mortality rates in your communities. Tell them the reasons for advocating the calling of a physician early in disease. It is a very definite fact that the public is extremely conscious of the importance of periodic health examinations and of the early diagnosis of can-

cer. They must feel that the doctor is also interested in these questions and after an examination they are not willing to be put off with a few words. Education of the laity, then, requires that physicians be able to answer and participate in the discussion of their questions.

The Educational Committee offers a certain feeling of security to the physician in the educational work he does as an individual. County societies or individual members are more willing to take an active part in these health activities when they know they have the support and backing of a committee representing the state society. The physician finds it easier to discuss protective health measures with his patients and their families when he knows that his colleagues over the state are doing likewise. Medical men and women should let the people know what is being done for the benefit of public health. Let the women's clubs and other lay organizations know through conversation or public addresses that you are keeping abreast of the advances in the field of obstetrics and pediatrics. Tell them what the periodic health examination of the child offers in future good health and what protection is guaranteed against certain diseases.

A physician has nothing to lose by cooperation with such a program. He has much to gain.

Illinois physicians are extremely fortunate in having a service bureau to supply them with aids in carrying out their part of this great health campaign. I refer to the Educational Committee. Perhaps some of you do not know that it was in 1922 the Illinois State Medical Society passed a resolution endorsing a broad plan of publicity through pamphlets, addresses and the lay press, to the end that the public be enlightened on the truths and principles contained in the development, progress, and present status of medicine. A Committee was appointed to carry on such a program but no instructions were given as to how it should function, nor were any funds placed at its disposal to begin operations.

An appeal was made to the membership for donations and in about one year a substantial sum was available. A director was employed, a program was mapped out and the work began. It was a difficult process, and at the end of a single year, the funds were practically exhausted. Accordingly, the Committee in its annual report

recommended that the work continue and that the expense be borne by the Society, without donations. This was unanimously approved, and since that time the Council has appropriated certain amounts regularly for the purpose.

The Committee, as an important part of its work, maintains a Speakers' Bureau of which many of you are active members. Clubs are asking for talks on mental hygiene, cancer, tuberculosis sex hygiene, heart disease, diets, care and management of children and other important subjects. The Committee supplies qualified speakers—in fact thousands of physicians have been scheduled to address every type of lay organization and last year approximately five hundred such talks were given before high school assemblies, parent teacher associations, women's clubs, men's clubs, mothers' clubs, teacher's institutes. Some of these appointments were taken care of by the women physicians on our list—not as many as we would like, especially since many groups definitely request women speakers.

How much better for lay organizations to have health programs given by representatives of organized medicine, selected speakers who can present the material in an interesting way, than to have speakers with biased opinions, or perhaps salesmen of so-called health products.

There is no doubt but what every physician who took part in one of these programs was helped materially and mentally by meeting with such lay groups regardless of the size of the audience. No one person could possibly have reached such a large number of groups covering practically every county in the state. Cooperation of the individual physicians with the Committee makes possible the wide circulation of health information in all sections of the state.

To assist those of you who are called upon to make these public addresses, we have built up a package library service which I think you will find extremely helpful. These libraries, sent out upon request, cover subjects of particular interest to the laity. As far as we know this special package library service is very unique, at least we have had letters from doctors as far west as Walla Walla, Washington, asking for the loan of material. Special folders will be compiled if necessary.

The Educational Committee believes that the newspapers should be used in educating people about health. Editors use material about discoveries in every other field and yet silence is often maintained concerning the important findings of medical scientists which keep our communities healthy and safe places in which to live. In order to bring proper information before the people, the Committee prepares and censors material suitable for release throughout the state. County societies have been offered this material to be used over the signature of local, county or state medical society. Hundreds of interesting articles are on file in the office of the committee. The material is written in a style readily understood by the public. Treatment is not discussed. There is no excuse for any paper in Illinois carrying a health column prepared by individuals who are not physicians of standing. In some cities physicians have shown the editors the dangers of such columns and they in turn have welcomed the opportunity of securing, without cost, material which represents the opinions of the entire medical profession rather than the ideas of one individual.

When we know of special health campaigns being carried on in any community, we are always glad to send the editors articles to be used during the campaign. We have found the releases on diphtheria immunization, smallpox vaccination, the Summer Round-Up, cancer have been widely used during such campaigns.

During the last twelve months 11,055 articles were released to Illinois newspapers. The Educational Committee has the material and facilities for sending out health columns, for sending announcements of medical society meetings, and of special health campaigns. The people are interested in your affairs. They want to know that you had a meeting, that you discussed heart disease, cancer, or reducing the infant and maternal mortality. This is news for the papers why not make use of the outlet?

The radio offers unequalled opportunities for presenting authoritative medical information. Of course, we know from our own observation that many of the so-called health talks broadcast are of a definitely inferior sort. At the same time,

some excellent material is being offered to radio audiences.

The Illinois State Medical Society, for example, has used various stations in Chicago and at present broadcasts regularly from stations WGN, WJJD, WAAF and occasionally from KYW. For these radio talks, individual physicians are asked to prepare papers which are then sent to the Educational Committee for editing and censoring. Later they are broadcast by physicians, announced as speaking for the Educational Committee of the Illinois State Medical Society. Last year 561 talks were given over the radio by our speakers. Copies of all radio talks are kept on file at the office of the Committee.

In addition to health talks, newspaper articles, radio talks, we have found that some people are reached by visual methods and for that reason our service includes illustrative material in the way of moving picture films and slides, which are borrowed from other organizations, pamphlets, and exhibits.

While the Committee has sought to bring the right kind of information to the laity and tell them the story of medical progress, we have at the same time tried to assist organized medicine. One hundred and fifty-eight programs were arranged for medical meetings in the last twelve months. Efforts have been made to further a study of those aspects of medicine which were apt to put the doctor in a bad light in the public eye, such as the infant and maternal death rate. More meetings have been encouraged to present talks on obstetrics and pediatrics. A number of crippled children's clinics have been conducted in several counties under the direct supervision of the local physicians. More interest is being aroused in the important subject of mental health.

One might almost say that medical standards rise in the same proportion as the public demands better care. Education brings about that demand. As a physician once stated, "Education of the people, plus continued education of the doctors, equals *State Health*, the surest guarantee for the future against socialized medicine, Federal methods, or rank charlatanism."

As a service committee to members of the Medical Society, it has been truly successful and

as a liaison committee it has been instrumental in smoothing over many difficulties and has devised methods of building a sympathetic understanding of a unified program. Members of the Committee have met with small groups of leaders of the various lay organizations. The Committee in turn has kept the county societies informed of the progress made through these meetings and has noted that members of the societies can assist materially by developing and strengthening contacts. The offices of lay groups have followed the same method in keeping their local groups informed. They too are confronted with difficulties, lack of understanding on the part of their local members and the inability to secure sufficient funds to circularize the entire membership. For that reason, we have recommended that local medical societies grant conferences, whenever possible, with well organized lay groups. We have found a willingness on the part of these clubs and associations to seek medical advice. Their methods have not always been the right ones and we know that the wrong approach has often resulted disastrously. We have for that reason urged club women and men to confer with their medical societies before undertaking any health program or activity—in other words, to get started right.

We have not assumed the role of dictator, we believe that local medical societies should formulate their own decisions concerning cooperation. We have tried to show, however, that all clinics, baby shows, or other health movements should first be approved by the medical profession and conducted with their supervision. We have suggested that pre-school child examinations be made by the family physician in private, and at a reasonable charge when the families are able to pay, having in mind the opportunity of educating parents to their great responsibility for the health of the child.

Certainly a wonderful opportunity is before medical women to enter into the health work of women's organizations and to give the guidance and leadership which will guarantee efficient service and foster harmony. The facilities of the Educational Committee are available to give you help and moral support, you are helping maintain this work, so why not make use of it in your contacts with the public.

SIGNIFICANCE OF BLOOD PRESSURE READINGS IN SPINAL ANESTHESIA*

Report of 40 Spinal Anesthetics with Neocaine, *From the Southern Illinois Prison, Menard, Illinois.

A. F. BARNETT, M. D.*

Assistant Physician, Southern Illinois Prison.

MENARD, ILL.

E. RALPH MAY, M.D.*

Chester State Hospital.

CHESTER, ILL.

Though safer, less toxic drugs and simpler technique are making subarachnoid block a popular mode of anesthesia with an ever increasing number of surgeons, the abrupt changes in blood pressure readings during the anesthesia often startle the novice and elicit his deep concern.

Since the significance of this blood pressure drop has been the basis of considerable controversy with regard to practical procedure, it has seemed pertinent to crystallize some of the important recent results of animal experimentation and clinical experience on this score. Also, to the end of presenting an accurate operating-room picture of blood pressure variation under spinal anesthesia, we have made a study of the readings during twenty-four hours after anesthesia in 40 consecutive cases of neocainization.

In our cases we have not found it of moment to resort to any of the usual pharmaceutical measures for the prevention of the drop in blood pressure associated with subarachnoid block, or to remedy the drop when it occurs, providing other precautionary measures as set forth in this article, are promptly instituted. Though we realize many hypertensive measures and vascular stimulants have been and are widely employed to combat the blood pressure drop, such as epinephrin, ephedrin, pituitary extract, caffeine, strychnine, atrophine and alcohol, our experience with neocaine is in line with the oft repeated statements of Labat and Koster with regard to the import of blood pressure readings.

Tabulation of a series of cases, however, may serve as a measuring stick to the uninitiated of what may be expected in a group of patients in the average good risk class.

The Blood Pressure Picture in Spinal Anesthesia: In our series of 40 neocainizations, we recorded both the systolic and diastolic readings during the operation and again twenty-four hours after operation. These cases included 16 hemorrhoidectomies, 15 herniotomies, 2 urethrotomies, 1 appendectomy, 1 periostotomy, 2 fistulas, 1 cholecystectomy, 1 plastic operation on the scrotum, and 1 operation for osteomyelitis.

During the Operation: There was a drop in systolic pressure in 80 per cent. of the 40 cases, ranging from 2 to 30 mm. Hg., with an average drop of 13.3 mm. The following tabulation indicates the variation range:

Cases	Shown an Increase of
7	2 to 10 mm. Hg.
0	11 to 15 mm.
1	16 to 20 mm.

On the other hand, in 20 per cent. of the 40 cases, there was an increase in systolic pressure of from 2 to 20 mm., with an average increase of 6 mm. The variation range of this increase is shown as follows:

Cases	Shown a Drop of
15	2 to 10 mm. Hg.
10	11 to 20 mm.
7	21 to 30 mm.

During the operation, the diastolic pressure showed a drop in 75 per cent. of the 40 cases and an increase in 25 per cent. The drop varied from 2 to 24 mm. Hg., with an average of 8.8 mm. The increase, from 2 to 10 mm., with an average of 5.6 mm.

Twenty-four Hours Postoperatively: Compared with preoperative readings, 72.5 per cent. still showed a lowered systolic blood pressure of 2 to 12 mm., or 4.3 mm. average.

In 22.5 per cent. there was still an increase over preoperative readings of 2 to 10 mm. systolic, or an average of 3.6 mm. In the remaining cases postoperative readings agreed with the preoperative.

Postoperative diastolic readings ran a similar course, 60 per cent. showing a lowering of 2 to 14 mm. (average 4.4 mm.), and 37.5 per cent. showing an increased pressure of 2 to 16 mm. (average 7.6 mm.).

In a consideration of blood pressure readings during spinal anesthesia, it must be remembered, too, that many other factors besides the anesthesia enter into the picture, such as the patient's fear and anxiety and individual pre-

disposition to variations in circulatory system function.

Safeguards in Spinal Anesthesia: Rygh and Besesen¹ in a 1928 survey of recent literature found an incidence of 75 deaths in 250,895 administrations of this method of anesthesia. This is a mortality of 1:3,345. However, as an analysis of these deaths showed that only 4 could be attributed to the anesthetic, a corrected mortality rate showed only 1 death in 11,000 administrations. As in the development of any improved technique, these authors felt that the incidence of mortality in spinal anesthesia has resulted from improper manipulation, use of toxic drugs, over-dosage, and misunderstanding of the physiology of subarachnoid block.

Within the last several years considerable animal experimentation has been carried on in an effort to clarify the physiology of alarming fall in blood pressure during spinal anesthesia, the occasional respiratory embarrassment and the cause of sudden death.

In the earlier days of spinal anesthesia, it was felt that the level of anesthesia depended upon posture during and after the injection and upon the specific gravity of the anesthetic injected. Respiratory failure and sudden death were attributed to respiratory paralysis due to migration and diffusion of the anesthetic to high levels of the cord and the medulla oblongata.

Contrary to this opinion, Koster and Kasman² have demonstrated by experimentation on frogs, guinea pigs and the cat that when the anesthetizing neocaine was applied directly to the medulla and upper cervical cord, there was no apparent visible effect on the respiratory movements of the animal in spite of the fact that the proportion of the anesthetic was much greater than that used in humans.

Their experiments led them to conclude that everywhere in the central nervous system the motor mechanism is particularly resistant to anesthetic action and that the anesthetic agents do not have the effect upon the medulla which has been ascribed to them but a selective affinity for sensory nerves. Furthermore, Koster³ has made extensive clinical application of this physiologic concept, having reported (1928) over 3,500 operations performed by him and his associates during a period of three and a half years under *general* subarachnoid block, in-

cluding many thoracic, head, and neck operations. They operated upon infants and upon the aged as well, without a fatality which they felt could be attributable to the anesthesia. Labat⁴ says of Koster's work:

"He has, by his laboratory experiments and clinical observations, given another blow to the theory of gravitation of the anesthetic fluid to the head with its alleged dangerous features. He has confirmed our statement that acute anemia of the brain is the cause of death during subarachnoid block. For this reason the Trendelenburg position is imperative immediately after the subarachnoid injection and should be maintained at least three hours after the operation . . . The modern school . . . uses posture (Trendelenburg position) to help gravitation of blood in the prevention of acute anemia of the brain, which is the only logical move in the sudden occurrence of circulatory depression."

It is of clinical interest to record Labat's conception of the physiology of the blood pressure drop. "In introducing an anesthetic solution into the subarachnoid space, he says in his 1928 monograph⁵ on regional anesthesia:

"The chief aim is to block off the sensory roots and abolish pain; but the roots of the motor nerves are reached at the same time. . . . These sympathetic nerves, coming from the central nervous system through the cord, not only go to the splanchnic area, but some of them are destined for the thoracic blood-vessels and the heart. Blocking the motor roots in the subarachnoid space, therefore, means producing a relaxation of the splanchnic blood-vessels and interfering with the thoracic vascular system as well . . . The fact is that the splanchnic circulation is flooded at the expense of the periphery at which the sphygmomanometer is set . . . A system of circulation depending chiefly on gravity is now established, during which the lowest portions of the body are the richest in blood. The elevated parts become poor and anemic until they are placed below the level of the reservoir, which is in the splanchnic cavity."

The clinical lesson, therefore, to be learned, as recommended by Labat, Jonnesco, Le Filliatre, Delmas, Koster and others who have large series of spinal anesthetics to their credit, is that prompt use of the Trendelenburg position is of utmost significance as safeguard against acute cerebral anemia and respiratory collapse.

A recent report which has added valuable material to our knowledge of safeguards in spinal anesthesia has been made by Bower, Clark, Wagoner, and Burns⁶ as a result of their experimentation on dogs at the University of Pennsylvania and Temple University, over the period of time 1922-1931.

Though their experiments left them somewhat unconvinced of Labat's explanation of splanchnic vasodilatation as the cause of the drop in blood pressure, they realized that their findings "were not conclusive evidence against a vasodilatation of the splanchnic area being concerned in the fall in arterial pressure." They felt, however, that their experiment gave considerable proof for the assertion "that respiratory embarrassment was intimately associated with the fall in blood pressure." Of the two reactions, they were led to believe "that the most important danger signal in spinal anesthesia was embarrassment in respiration and that the alarming drop in blood pressure, which was being watched so closely clinically was of secondary importance."

The result of their experiments to date led them to conclude: "The marked fall in blood pressure is mainly cardiac. Paralysis of the intercostal and phrenic nerves interferes with normal chest expansion and diaphragmatic excursion causing a damming back of venous blood in the right heart and its tributaries."

They did not find that epinephrin and ephedrin prevented cardiac dilatation but that "the Drinker respirator alone will resuscitate an animal." They believe that an important safeguard in spinal anesthesia is the use of a respirometer, to determine early changes in respiratory volume; also, that artificial respiration offers the best means for combating respiratory embarrassment and the fall in arterial pressure.

Another very practical result of their experiments has to do with their evaluation of the necessity for the selection of the least toxic anesthetic drug. They attempted to gauge the relative potency and toxicity of several commercial anesthetic solutions by timing, in dogs, the disappearance of all respiratory movements and the period of artificial respiration required, before voluntary respiration was resumed. They found that the drugs ranged themselves in the following sequence: "Butyn, stovaine (different commercial preparations), nupercaine, spinocaine, apothesine, novocain (different commercial preparations) and least toxic neocaine."

Evaluation of our Experience with Neocainization. Spinal anesthesia has, in selected cases, certain advantages over inhalation

anesthesia which are brining it into wide use even in hospitals in which inhalation anesthesia has until recently been the established order. We have in our own experience restricted the use of neocainization to operations below the diaphragm.

Muscular relaxation under spinal anesthesia is a feature which is a revelation to the surgeon. In abdominal operations, this permits of gentler manipulations and elimination of surgical traumatization. There is no operative shock. Postoperative reactions, such as an occasional postoperative headache and nausea, are at a minimum. In our series of 40 neocainizations reported in this paper, there were untoward symptoms during and after neocainization in only two cases. One of these patients was nauseated fifteen minutes after the injection; the other was nauseated to the point of vomiting. Usually the nausea may be easily controlled by instructing the patient to breathe deeply. Inhalations of oxygen are helpful, as well as applications of ice to the face.

In patients with pulmonary tuberculosis spinal anesthesia is a boon, since there are no unfavorable effects upon the lungs and since the frequency of respiration is diminished during the anesthesia. Likewise in functional and organic cardiovascular diseases, neocaine solves the anesthesia problem since, as Labat has pointed out, it temporarily relieves the circulatory system of its normal burden.

So far as the kidneys are concerned, spinal anesthesia has a distinct advantage over inhalation anesthesia in advanced renal diseases because of its minimal irritation. Though the only known route for the elimination of neocaine is through the kidneys the rapidity of its elimination reduces its toxicity on the kidneys to a minimum. Spinal anesthesia is, of course, contraindicated in cerebrospinal conditions.

Reduction of risk in spinal anesthesia entails, in our opinion, familiarity with its induction, with first inductions under the supervision of an experienced spinal anesthetist, selection of the least toxic drug, early detection of respiratory embarrassment and prompt inauguration of corrective measures.

Pure French neocaine, as used and recommended by Professor Gaston Labat, has in our hands proved of minimum toxicity. The tech-

nique of its use is simple, hence less conducive to untoward effect and accident.

For operations such as we have recorded in my present series, we make spinal puncture between the first and second, the second and third, or the third and fourth lumbar vertebrae. Removing the stylet, we allow the spinal fluid to run directly into the ampoule of neocaine crystals so as to effect a solution in the patient's own cerebrospinal fluid. When the crystals are dissolved, the solution is withdrawn from the ampoule into a 10 cc. syringe with a small needle attached. The needle is then removed and the syringe attached to the spinal needle. We then withdraw spinal fluid up to 10 cc., inject 5 cc., then withdraw spinal fluid to 7 cc., inject to 3 cc., and so on until the entire content of the syringe has been injected. The stylet is then replaced, the needle withdrawn and the patient placed immediately in the Trendelenburg position.

This method of alternate injection of solution and withdrawal of spinal fluid is of benefit in my experience for the prevention of gastric distress. When the neocaine was injected without "barbotage," the patient was more prone to experience nausea and vomiting; also, it took longer for anesthesia to set in.

RECOMMENDATIONS

1. Spinal anesthesia with neocaine has in our hands been attended with a minimum of unfavorable response during or after operation and has greatly increased surgical facility.

2. Nevertheless, there are certain safeguards which, from a survey of the literature and clinical experience, are imperative and should never be neglected. One of these is prompt use of the Trendelenburg position immediately after injection of the neocaine. Following the experiments of Bower et al.⁶, a respirometer should be used to determine early changes in respiratory volume and resort made to artificial respiration at the first sign of respiratory embarrassment. These authors recommend use of the Drinker respirometer. Following the experience of Weinstein and McHugh⁷, who have recently reported their use of neocaine in one thousand cases without a death attributable to the anesthesia, emergency and resuscitation treatment in spinal anesthesia should include such measures as intravenous infusion of 5 per cent glucose or saline, use of the high Trendel-

enburg position, cardiac massage if the abdomen is open and the heart region accessible, and mechanical respiratory stimulation with inhalations of carbon dioxide and oxygen.

3. With precautions such as these in mind, which it is to be noted should be instituted without a moment's delay at the first warning of respiratory disaster, what the surgeon may expect of spinal anesthesia is a revolutionizing facility with regard to his own surgical skill, as well as a grateful absence of the usual post-operative effects on the part of the patient with uneventful convalescence.

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THE OUTLOOK FOR PUBLIC HEALTH*

FRANK JIRKA, M. D.

CHICAGO

Just forty years ago Chicago opened the gates of the great Columbian Exposition to the world. That event was approached with no little misgivings and apprehension on the part of the mayor and city council. The exhibits were superlative and abundant. Extensive amusements were provided with lavish extravagance. Dignitaries, with plenty of royalty from the far corners of the earth had been invited and would be present. The exhibition, entertainment and social features, of the project were entirely equal to the occasion, and generally satisfactory.

There was, however, one thing to fear and that was the possibility of a devastating epidemic. "Influential journals, both lay and medical and upon both sides of the Atlantic," declared the city health commissioner, "gravely warned their readers against the dangers of a

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sojourn in a place where, as alleged, they would be compelled to drink Chicago river water; and death by typhoid, smallpox or other zymotic disease was predicted as the fate of those who should venture to visit the World's Fair city."

Mayor Harrison expressed vigorous concern about the health problem. "Our first duty," he declared before a meeting of the city council, "is to keep the city in a healthy condition so that when the world comes here it will not come to a charnel house."

When the great exposition was over the health commissioner proudly asserted that none of the direful forecasts by the prophets of evil had materialized. Only 6,000 people had typhoid fever in Chicago that year, and all but 670 had recovered. Diphtheria had resulted in only 975 deaths, which indicated at least 4,000 cases of that disease. The general death rate was only 21.6 per 1,000 inhabitants. Over one-half of all mortality was among children under five years of age and the infant death rate was 178 per 1,000 births, but the health commissioner declared that these figures represented a gratifying improvement over previous experience.

Things have changed since then. The city health commissioner of Chicago was justifiably proud of health conditions which prevailed in that city during 1893, as compared with what had gone before. Mortality rates which he considered gratifying, however, would be disgraceful and even alarming today. Health conditions in which he took pride would ruin the prospects of the Century of Progress that soon will open with the blessings of health officers and sanitarians everywhere. Had the rate of 1893 prevailed last year in Chicago that city would have experienced no less than 10,000 cases and 2,000 deaths from typhoid fever. As a matter of fact there were only 102 cases and 14 deaths reported in the city. Likewise diphtheria caused 68 deaths last year instead of 4,000, which would have been the figure had the 1893 conditions prevailed and there were 1,266 instead of 10,000 cases. Furthermore, 2,404 infants died last year in Chicago instead of 8,700 who would have been lost under the rate of 1893. Less than 10 per cent. of all mortality last year was among children under five years of age against more than one-half in 1893. Had the general death rate of 1893 prevailed last year in Chicago there would have

been 40,000 more deaths than actually occurred.

These are figures to conjure with. They represent a magnitude of positive improvement in human affairs, which can in no wise be duplicated in any other department of life. They measure the gift of life itself, which medical and sanitary knowledge has bestowed upon thousands of people in generous abundance.

Eleven years after the Chicago Columbian Exposition closed, just 29 years ago on May 4, the United States government started to work on the Panama Canal. It is not generally known that the magnificent success of that great project at one time hung in a delicate balance that hinged upon medical knowledge, the acceptance of which was still under debate. The job that took a decade to complete was scarcely two years old. Bitter opposition to the sanitary principles practiced by William Crawford Gorgas had arisen among the engineers. A new Canal Commission urgently recommended the removal of Gorgas early in 1906. This proposed change was approved and advocated by the Secretary of War, the Honorable William Howard Taft. Strong pressure by powerful friends recommended to President Theodore Roosevelt that Gorgas be replaced by Dr. Hamilton Wright who was outspokenly opposed to the idea that mosquitoes carried yellow fever.

President Roosevelt was uncertain about the matter, but leaned toward following the recommendations of his Secretary of War, and the Canal Commission. He took the precaution, however, to ask the opinion of Dr. William H. Welch of Johns Hopkins, who recommended that Gorgas be retained. Still undecided the President invited his close personal friend, Dr. Alexander Lambert of New York, to advise him on the matter. Only after the most urgent pleading by Dr. Lambert did the President finally decide in favor of Gorgas. "They tell me," Roosevelt is quoted as saying, "that Gorgas spends all of his time oiling pools and trying to kill mosquitoes."

By the narrow margin of a single decision on the part of a half skeptical president, truth prevailed and through sound sanitary practice, which the American Medical Association upheld from the outset with the greatest vigor and credit, the construction of that great waterway was made possible. The Panama Canal in other words, is

a perpetual monument to the solid principles upon which public health work is based.

The story of yellow fever is well known. In 1905 the last epidemic of that disease occurred in this country. During the century that went before fully one-half million people in the United States had the disease, and no less than 100,000 failed to recover. The economic losses can be measured only in astronomical figures. It is hard to believe that since 1905 public health work has saved at least 150,000 people from sickness, and 30,000 from death by yellow fever in the United States alone.

Apparently we have come a long way since the typhoid and yellow fever days. In the light of those triumphs and many others, it would be an exaggeration to say that nothing has yet been accomplished—that everything remains to be done. A survey of future possibilities, however, encourages that point of view. The achievements of the past have merely cleared the vision for future accomplishments in the improvement of public health.

In the past the great triumphs of public health have been largely accomplished against those diseases which could be combated by mass effort. The sanitation of water and milk supplies, the proper disposal of sewage and the eradication of mosquitoes, are things that can and have been accomplished through community effort. Future improvement in public health must depend more and more upon individual effort. This will involve education. The public must know whom to believe, what to do, and when to do it. The health department and the medical profession is the source of this information and it is their duty to disseminate the knowledge.

There approaches also with great rapidity the necessity for a sharp shift of emphasis in the public health program. This calls for more attention to the health problems of middle and later life on the one hand, and to a substantial refinement of technique in the usual public health activities on the other. The practice of birth control, and the outstanding success of preventive medicine in saving child life has caused a tremendous shift in the age level of the population. Instead of 3 in 10, as was the case in 1900, there are now 4 in each 10 of the population who are 35 years old or over. Lately the birth rate has declined rapidly and the death rate of children

has gone down at an accelerated rate. Soon we may expect that more than one-half of the population will be upwards of 35 years of age. Thus heart disease, cancer, nephritis, rheumatism and perhaps most important of all, mental difficulties, will loom larger among the health problems to be met in the future. Periodic health examinations, immunization against diseases so far as practicable, training in mental hygiene, and the building up of greater confidence in the medical profession are the means which must be employed against these problems.

Birth restriction has been proportionately greater among the better types of the race than among the less satisfactory. The 1930 census showed that 18 per cent. of the wives of professional men go entirely childless, against only 14 per cent. of the wives of unskilled workers. The range in the size of families follows a similar course. This points to increasingly important problems in mental health. Regardless of the hereditary factor in mental capacity, the environment under which children born to families of the less satisfactory type must live, creates a serious obstacle to healthy development. From all sides, therefore, it seems clear that the problem of mental health is crowding itself upon us whether we like it or not. Civilized society must descend to a lower standard of citizenship, or devise means for training those born under unfavorable circumstances to fit into the scheme of things.

Refinement in the technique of public health procedures is made necessary for a number of reasons. In the first place there are new discoveries like susceptibility tests, and the effects of ultra-violet irradiation on foods. Secondly, the larger results already obtained from mass effort have magnified the importance of *carriers* in the spread of disease, so that means of detecting and controlling these sources of infection must be employed. Thirdly, the necessity for economy makes selected effort a virtue. Thus in campaigns against diphtheria, the greatest stress and emphasis must be placed upon the child under six years old. Instead of flooding a community with educational matter concerning diphtheria, an effort should be made to reach only the parents of children under ten or twelve with particular emphasis upon those of the younger children.

The very appearance of typhoid fever in a community must be accepted in the future as a challenge to epidemiology in the detection of a carrier. Somewhere in the background the carrier exists. The technique of the health department must be such as will detect the carrier in order to dry up the source of the trouble.

There is another direction in which public health activities need to be selective. This is in respect to localities that may be termed reservoirs of infection. Last year, for example, seventeen counties in Illinois experienced death rates of over 10 per 100,000 from diphtheria while the state rate was only 3. Three counties had rates of over 25 each. The same is true in respect to typhoid fever. One county, Hardin, reported the amazing rate of 86 deaths per 100,000 population from typhoid fever. A dozen counties had rates of over 10 each against a state rate of 1.6.

In respect to tuberculosis much the same situation prevails. Two counties reported no mortality at all last year while others ranged from minimal to sharply excessive rates. These statistics indicate that preventive and control programs must be highly selective, in order to concentrate great effort on areas which now provide the great reservoir of communicable diseases in the state.

Not all of the larger health problems are new. Tuberculosis, for example, is still a problem of the first magnitude. Today no less than 40,000 people in Illinois are the victims of active tuberculosis. This disease results in upwards of 4,000 deaths annually. In the skin test and the x-ray, however, we have available the tools with which tuberculosis can be reduced to a factor of minor health significance.

The problem, from a public health viewpoint, is primarily a matter of detecting and controlling sources of infection. No person can have tuberculosis without being infected with tubercle bacilli. In the vast majority of cases the bacilli reach healthy people from other people who are infected.

A positive skin test on a young child shows infection. Since the contacts of young children are limited, the source of infection is narrowed to a relatively small number of people. Thus through the test it becomes possible to trace down and control unsuspected cases of tuberculosis

which make up a great reservoir from which the disease is spread.

Among thousands of school children tested in Massachusetts it was found that more than one-half of the infections came from other members of the family. Meyers cites an instance where 4 out of 60 nursery school children gave a positive reaction to the test. A search showed that one of the teachers was the source of infection. From all of the experience with the practical application of the skin test, it seems clear that sources of infection in the households of young children and among school teachers would be relatively easy to locate. Carrying out a program of this kind would result in a tremendous saving of life and health. Supplementing the test with x-ray examination where indicated would, of course, be of infinite value to thousands of children and young adults with early and minimal tuberculosis.

There are in Illinois about two and one-quarter million head of dairy and breeding cattle. Practically all of those cattle have had the tuberculin test, so that tuberculosis has been almost completely eradicated from dairy and breeding herds of the state. In Illinois there are about half a million children under five years of age and another half million of high school age. It would seem that we ought to do no less for the preservation and protection of their health, than for the cattle that we own. In the young child a positive tuberculin test can be used to detect sources of infection. For the high school child it will lead to a diagnosis that makes effective treatment possible at a time when tuberculosis is apt to get started on a disastrous course. Thus by the use of a new technique it is not only possible, but altogether practicable to strike tuberculosis completely from the list of major health hazards.

Due to lack of time I am going to eliminate from this paper the relationship between food and health.

Milk is a perpetual public health problem that gives promise of assuming even greater importance than in the past. The significance of pasteurization and sanitation is well known. Recent experiments show that milk has nutritional possibilities that were never suspected until lately. By irradiating milk or cows, with carbon arc lamps, or by adding yeast to the food of cows

an antirichitic value fully equivalent to cod liver oil or ergosterol can be added to milk. The cost of the carbon arc method of irradiation is less than a quarter of a cent per gallon when milk is handled in quantity. The significance of possibilities of this kind needs no emphasis to a medical audience. The ability to prevent and manage rickets, by prescribing an adequate milk supply from a properly regulated source sounds like something that approaches the miraculous. Experiments and even practice show that such is the fact. In New England the practice of modifying cow food with the object in view of producing antirichitic milk has already reached considerable magnitude. These trends in the dairy industry add to the responsibilities of health authorities, and make more important than ever the sanitary supervision over milk.

Another closely related problem is the influence of diet and nutrition on teeth. Both in the laboratory and in practice, it has been demonstrated that diet has a profound effect on the dental structure. Boyd and Drain in Iowa and Bunting in Michigan have shown that caries in the teeth of children can be arrested by a change in diet that limits carbohydrates and increases milk, eggs, vegetables and fruits. Agnew has announced the ability to prevent decay, and to arrest it where caries have already started by the use of a diet rich in vitamin D and phosphorus. Price has recently pointed out that in certain Swiss villages which have escaped the dietary habits of modern civilization, only one child in three has carious teeth, the exact reverse of conditions here. The Mellanby's in London, have been able through the regulation of diet to produce caries almost at will in animal experiments.

These observations and experiments indicate the tremendous importance of dietary habits on general health conditions. When more than two-thirds of high school pupils are found to have carious teeth, there are ample grounds for believing that something is radically wrong with health habits. If a change in diet is the way out, the public health program of the future can scarcely escape a large responsibility in this field.

Industrialization has brought with it a multitude of health problems which may be expected to increase in importance. The health hazards of industry are divided principally into three general classes. These are accidents, poisoning

and lung ailments. All three of these problems involve public health aspects. The accident rate can be controlled to a large degree through the medical examination of personnel, the proper construction of buildings, the use of safety devices and the proper placement of equipment.

Poisonings result chiefly from lead and lead products. Carbon monoxide gas also constitutes a definite risk. The lead products are utilized in a large and growing number of manufacturing processes. Poisoning of employes can be avoided only through the appropriate use of sanitary precautions, the careful medical observation of personnel, and the selection of personnel through medical examinations.

Lung involvement is a hazard of the dusty trades. Chief among these are the manufacturing and industrial processes which release silica dust into the air. The manufacture of asbestos products also involves a serious risk to the respiratory system. Rock drilling, granite cutting, brass foundry work, cement and slate mills and silver polishing are the activities in which the danger of silicosis is greatest. The utilization of dust collecting equipment, and of efficient ventilating devices must be relied upon as the principal preventive measures. Relatively frequent medical examinations of exposed employes are essential, however, in order to guard against unsuspected danger.

Another problem of industry is that the conditions under which employes work may greatly increase the risk of diseases common to the general population. Employes of the steel industry, for example, suffer a much higher mortality from pneumonia than do wage earners of about equal rank in other occupations. Strenuous work coupled with exposure to sudden and wide changes in temperature, appear to be dominant factors in causing the greater pneumonia incidence. In like manner it may be inferred that other occupations carry with them conditions that favor various diseases.

Past history gives no assurance that industrial captains will voluntarily and altruistically venture upon health protective measures for employes. Reasonable working hours, respectable rates of pay and compensation for injuries, came only as the result of pressure from legislation and labor unions. There is no likelihood that technical measures required for protecting the health

of workers exposed to industrial hazards will be adopted on anything like a universal scale, without firm and vigorous educational work on the part of health departments. This must become more and more a function of the State Department of Public Health, if it fulfills the duties and responsibilities imposed upon it by the statutes.

Chronic rheumatism is a health problem that has had practically no public attention. Studies in Massachusetts, as well as in Great Britain, indicate, however, that this condition constitutes the greatest single cause of chronic ill health. A house to house canvass of one per cent. of the population in Massachusetts, led to an estimate that there are at any one time 145,000 people in that state with chronic rheumatism. Over two-thirds of these people either receive no treatment at all, or are applying self prescribed treatment. In Great Britain a study showed that wage earners lose 5,500,000 weeks of time annually because of chronic rheumatism. Reports from both Massachusetts and Great Britain show, however, that two-thirds of the chronic rheumatism patients can be either completely cured or greatly improved with appropriate treatment. There seems to be no valid reason for doubting that the prevalence of chronic rheumatism is no less in Illinois, than in Massachusetts or Great Britain. The problem is one that has had no attention. The State Department of Health can scarcely ignore such a situation.

These new problems, or new methods of attacking old problems, are crowding themselves upon the health horizon. Their recognition does not imply that infant and maternal hygiene, the sanitation of milk and water, the prevention of diphtheria and smallpox, the health supervision of school children, and the suppression of venereal diseases, are problems that have been completely solved. Far from it. These activities will continue to demand the constant attention of public health workers. The newer problems and the newer ways of attacking the old ones, mark the ever-broadening frontiers of preventive medicine and public health. They lift a challenge to the medical profession and to the official public health agencies. They cannot be approached nor solved satisfactorily without the closest cooperation and accord between the practicing physicians and the public health workers. A solid union

between these two is the best possible insurance against state medicine.

The program of the State Department of Public Health is primarily educational. For the practice of medicine there are physicians enough and to spare. With properly adjusted relations the official health agencies and the medical profession depend each upon the other for services and assistance that neither can provide alone in progressing toward the attainment of a common purpose. The health official regards the community in the light that the private physician regards an individual patient. To the health officer a case of tuberculosis or typhoid fever, is to the whole community what an infected finger or tonsil in an individual patient is to the practicing doctor. The infection must be dealt with at the focus in order to protect the whole body.

When the Department of Public Health undertakes to distribute arsphenamine, vaccines and sera the object is principally to dry up sources of infection on the one hand, and on the other to ease the pressure on the tax payer. Very recently, for example, it was found that the medical and hospital care of patients suffering from venereal diseases in St. Louis costs substantially more than \$2,000,000 annually. Only one-quarter of that sum goes to private physicians. Nearly one-half is paid out of public funds for maintaining hospitals and institutions which take care of public charges. It seems fair, therefore, for official public health agencies to distribute drugs and make laboratory tests, in efforts to dry up the sources of infection which feed the public hospitals and institutions with the wreckage of human life. This is the principle upon which is based all activities of the State Department of Public Health. The aims and purpose of the State Department of Public Health is to bring to the public the highest possible degree of favorable health, through the intelligent use of the medical profession, and the application of recognized principles of sanitation. To this end it must collect and study a vast amount of statistical data, indulge in laboratory research, keep informed about what is going on throughout the world, and manage in some way to guide the public along the pathway of sound medical and sanitary knowledge.

Any public health program will encounter opposition. The newer the procedure the greater

will be the volume of obstacles thrown in the way. The American Medical Association standing firmly with Gorgas succeeded against powerful opposition in the application of knowledge that eradicated yellow fever. Standing shoulder to shoulder the State Department of Public Health and the organized medical profession can give to Illinois an increasingly high degree of health protection, and at the same time maintain the integrity, independence and self-respect of the citizen, the physician and the official.

TREATMENT OF ACUTE GONORRHEAL EPIDIDYMITIS BY INJECTION OF THE PATIENT'S WHOLE BLOOD*

LEON M. BEILIN, M. D.

CHICAGO

Autohemotherapy has been much in vogue in recent years. It was first introduced into dermatology by Meyer, Linser, Spiethof, Henk, Fox¹ and others, who used the patient's own blood serum and later that of other individual's in the treatment of certain skin disorders, namely, herpes of pregnancy, pruritis, urticaria, eczema, dermatitis herpiformis, etc. Ravaut,¹ wishing to avoid the complicated technic necessary in the preparation of the serum, tried the injection of the whole blood immediately after it had been taken from the patient. Later he used this method for the treatment of gonorrhea and its complications. Other investigators, like Farnara, Bussolai, Epstein, Von der Beke,¹ and Papi,² had experimented further with autohemotherapy in gonorrhea, using the whole blood and reported varying degrees of success. Weill,³ tried autoplasmotherapy in gonorrheal epididymitis with favorable results; this consists of the removal of the fluid from an accompanying hydrocele and having heated it to 45° C. injecting it subcutaneously.

Recently, Valerio of Brazil,⁴ treated one hundred and fifty patients with acute gonorrheal epididymitis by intraepididymal injections of the patient's whole blood with results so encouraging as to lead me to try this method of treatment.

As to the mechanism of its action, many opinions are expressed. According to a majority of the authors, autohemotherapy acts in the same

way as foreign protein treatment, bringing about a colloid disequilibrium, which is manifested by the so-called hemoclastic crisis, a syndrome characterized by lowering of blood pressure, primary leucocytosis followed by leucopenia, disturbed white cells ratio, increased coagulability and change in refractometric index of blood.

I am presenting herewith a preliminary clinical report on the treatment of acute gonorrheal epididymitis by injection of one c.c. of a patient's whole blood into the epididymis. This report is based on a study of sixty-two consecutive cases, fifty of which were observed and treated at the Municipal Social Hygiene Clinic conducted by the Board of Health of Chicago and twelve in my private practice.

All cases were ambulatory, patients receiving no other treatment besides the autohemotherapy, except some scrotal support by suspensory bandages, often self-made and poorly fitting, and hot applications, when these were available. Local treatment for gonorrhea was resumed after symptoms of acute epididymitis had subsided, when residual infection in the urethra or its adnexa was present. Careful records of the cases treated were kept.

These sixty-two patients, the youngest of whom was fourteen and the oldest, sixty-three years of age, all had gonorrheal urethritis of four days to five and a half months duration, complicated by acute epididymitis of one to twelve days in onset. In thirty-nine, epididymitis was confined to the left side, in twenty, to the right, and in three it was bilateral at the time of first examination.

Eleven clinic patients received only one injection, and failed to return for further treatment. The remaining fifty-one cases received from three to eight injections each, the average being 4.8 injections per patient. 243 injections were given to the entire series.

Clinical observations: Marked improvement to a total subsidence of pain and tenderness had usually occurred within two to twelve hours after the first injection, while an almost immediate relief was often noted. As a rule, at the subsequent injections, the testes and epididymis could be handled without much discomfort or pain to the patient.

Some resorption of inflammation and reduction of swelling was usually observed after the second

*Read before the Chicago Urological Society, May 25, 1933.

injection. After the third injection, epididymis was normal on palpation in eighteen cases.

After the 4th—in 32 cases.

After the 5th—in 40 cases.

After the 6th—in 43 cases.

After the 8th—in 45 cases.

In six cases resolution did not take place completely and there remained a small amount of swelling after eight injections were given. However, in these cases I did not feel that the presence of small, discrete and painless nodules in the cauda epididymis was sufficient indication for further injections. As a rule, the induration and swelling became less marked with each injection, though the indurated area did not in all instances get progressively softer with each injection; at times it fluctuated but usually it progressed satisfactorily.

The maximum improvement was noted after the third injection. Slight local and general reaction following injections was often observed. Acceleration of pain due to the increased intraepididymal tension from injections of blood was not constant; when present, it was but of short duration, usually lasting from few minutes to two hours. Some patients had a rise of temperature and a slight chill coming on from two to four hours after injections. These cases seem to profit most by the treatment. The pulse-rate was counted before and at one and three hour intervals after each injection, in twelve instances; it remained unchanged in eight cases, while in four there was a slight preliminary decrease followed by an increase. White blood count taken before and in one and three hours after injections, in twelve cases, showed no change in count in three, and an increase of 1,500 to 7,000 leucocytes within three hours in nine instances. No effect on the blood pressure was noted in the above cases.

Complications: one scrotal abscess occurred in a colored patient; this was incised and drained and it healed promptly. There were six recurrences of epididymitis, which were due, I believe, to discontinuance of treatment on the part of the patient of the infection of posterior urethra, prostate or vesicles, which was still present. We know that these structures are practically always involved in the case of epididymitis.

Contraindications of this treatment, as far as I am able to determine, are: 1. Extreme nervousness and hypersusceptibility to pain on the part of some patients. 2. Marked elevation of tempera-

ture, chills, etc., at the time of treatment. 3. Severe or fulminating type of epididymitis, and 4. Presence of gross suppuration of epididymis, i.e. conditions where surgical intervention is indicated.

The technic of treatment is very simple. Injections are made very carefully on account of marked tenderness of the scrotal skin and the involved organ, though it was not necessary to use any local anesthesia in any of the cases treated. One c.c. of the patient's blood is taken from any of the veins of the fore-arm and is injected rapidly into the center of the involved area; the scrotal skin being previously disinfected with alcohol or mercurochrome. I find, it is preferable to use a 5 cc Luer-Lock syringe with a fine needle of about 23 or 24 gage and one inch and a quarter in length. The needle should be kept very sharp; this is important, as the involved tissues are tough and after the first injection the point of the needle dulls rapidly, causing unnecessary pain on passing through the skin.

Injections are made at a depth of one to three cm. depending on the degree of edema and infiltration of the surrounding tissues. In a small percentage of cases an occurrence of extensive hydrocele with the exudation becoming solidified, obscures the outline of epididymis, obliterates the normal groove between it and the testis, thus increasing the difficulty of delineating the structures.

Injections are repeated at twenty-four or forty-eight hour intervals, depending on the tension of the inflamed tissues. If it required fifteen to twenty minutes or longer for the tension to subside, the next injection was not made until after forty-eight hours. If the tension yielded in two to five minutes, the injection was repeated on the following day.

The first injection should be given as soon as possible after the onset of the epididymitis. The sooner the injection is given, the more rapid is the cure.

Conclusions: The results obtained by this method of treatment of acute gonorrheal epididymitis have been, in my experience, superior in every way to all other methods used, singly or collectively.

It diminishes the severity of symptoms, shortens the course of infection and promotes a *restitutio ad integrum* more rapidly than any

other form of therapy, thus reducing to a minimum the subsequent development of azoospermia. A complete anatomical and physiologic cure may be expected from this treatment.

The exact mode of its action is still in the field of speculation, but its administration is practically free of danger. Its simplicity and economy are distinct and added advantages.

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THE INSURANCE ASPECT OF ROENTGENOLOGY IN CARDIOLOGY*

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In no field is it more necessary to maintain the nice balance between clinical knowledge and statistical experience than in the large and increasing groups of cardio-vascular-renal impairments as they relate to insurance. Clinical conceptions of these conditions have changed repeatedly during the last few decades and statistical evidence has altered as widely, during the same period. When we think of the contributions which accurate blood pressure estimations alone have added to our knowledge of heart disease and realize that a little over twenty-five years ago blood pressure did not enter into either clinical or statistical decisions, we can appreciate how essential it is to keep receptive to new clinical methods as well as constantly changing statistical evidence. The sphygmomanometer has proven its value. Since then we have had the refined development of tests for albumin, quantitative sugar and blood sugar and many other mechanical aids in evaluating signs or symptoms referable to the cardio-vascular-renal system.

Dr. Dublin has focused our attention on the seriousness of organic heart disease. He has estimated that one in every five of the population living at the age ten will eventually die of organic heart disease, that the child of ten is

now three times as likely to die of heart disease as from tuberculosis and that as the more common insurable age is approached the incidence increases. At age thirty-five the probability of dying of heart disease is four times that of dying of tuberculosis.

He has also pointed out the fact that in most instances these deaths involve not only a loss of many years of productive life, but often years of complete invalidism prior to death.

There are in this country 2,000,000 people ill with heart disease and 200,000 deaths annually. Death from arterial disease (apoplexy) and Bright's disease, closely parallel the heart disease curve, and double the total loss from combined cardio-renal-vascular impairments.

A calculation by Henry S. Nollen, deduced, in collaboration with fifty-two insurance companies, that in an average community of 100,000 policy holders, organic heart lesions caused the death of 127 persons; pneumonia ranked second, with 88; then follows tuberculosis with 81 deaths and fourth in order is cancer with a toll of 72, Bright's disease 68 and apoplexy 56 deaths.

It will be noticed that the cardio-renal-vascular group has a very large mortality rate. These changes occur most frequently after the age of forty and are being accepted in a major sense as senescent changes, consequently, as the age approaches at which a person might afford a large insurance policy he also becomes burdened with those senescent changes that make him a risk. Only such a conception gives a broad enough view to successfully guide and influence the individual clinical case or to arrive at an adequate basis for underwriting action. It is true that years have been added to the average life expectancy, but the duration of life has not been extended—only the attainment of its natural length has been rendered possible.

At this point I wish to call attention to the important factor which is frequently neglected, namely, heart size. At present the underwriting standards of heart size are confined almost altogether to a grossly inaccurate estimate of normal, moderate or great enlargement, determined by observation, percussion and auscultation. Attention should be called to this, first, that of all the indications of a chronic degenerative process, the most constant and most important are cardiac hypertrophy and dilatation; second,

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that heart size is susceptible to fairly accurate measurement by the use of the x-ray.

Eyster says: "Determination of the size and contour of the organ represents the most important single procedure in cardiac diagnosis. If we are in a position to detect with perfect accuracy the departure from the normal in this respect, we could, with our present knowledge of cardio-dynamics, determine the presence and estimate the extent of every abnormality except those specifically affecting the automatic and conductive system."

All recent experimental work tends to indicate that the real injury that results to a heart in organic heart disease is the result of stretching the muscle. It is this, probably, which is the direct cause of the hypertrophy. All of us are familiar with young subjects with multiple valve lesions who have perfectly good compensation and are physically active. The hypertrophic heart undergoes degeneration earlier than the normal heart.

The truest estimate of the extent of the encroachment upon the myocardial reserve is to be gained from a determination of the extent of the enlargement of the heart. This dictum of the modern cardiologist is the one least well understood and least readily accepted, perhaps, because of the difficulty of determining the extent of the enlargement in borderline cases. Nevertheless, any enlargement which is demonstrable, means damage to a greater or lesser degree to the myocardium, and a loss of myocardial reserve and the progression of the disease is indicated by an increase in the size of the heart.

In Europe the custom has been to use the method developed by Professor Moritz known as orthodiascopy, in which the patient faces the observer before a fluoroscope and the central x-ray beam is used tangentially to the cardiac and aortic outlines, tracing these projected points on a suitable material. In addition the extreme lateral edges of the chest are marked off at the level of the diaphragmatic dome. Then a ratio is established between the transverse diameter of the heart and the diameter of the chest. This ratio is accepted to vary within the normal limits of from 39 per cent. to 53 per cent.

This method requires great expertness and in addition, moderate breathing, also a certain

amount of body immobilization of the patient which is quite difficult.

In this country, teleroentgenography is the method most frequently used. The essential factor in this procedure is to have a focal film distance of at least six feet, the purpose of which is to eliminate magnification of the cardiac silhouette. This is accomplished as far as practical purposes are concerned, although the greater the cardiac enlargement, the greater the magnification; also, the deeper the chest, the greater its distortion, and similarly, the greater the width of the chest, the more the relative increase in the transverse dimension of the chest; however, the actual percentage differences between the calculations of the cardio-thoracic ratios based on orthodiascopy and teleroentgenography are of no consequence. The differences in area calculation by the two methods is noticeable, those obtained by teleroentgenography are larger, average from 15 to 25 per cent. greater.

Again this discrepancy is not as detrimental as it appears; first, in both instances the aorto-aortic junction cannot be definitely recognized and neither can the lower periphery of the heart, which is submerged in the diaphragmatic trough, be definitely traced, therefore, these must always be variables subject to the inclinations of the observer. In addition, the heart when viewed laterally inclines slightly, so that the base is more posterior than the lower portion; also, some hearts are rotated a trifle more than others, therefore, these variations will make it impossible to get the absolute size of the heart, nevertheless, the mensuration is quite accurate for all practical purposes. Incidentally, spinal curvatures will have some influence on contour and silhouette area.

The film, seems to the writer, to be the method of choice, because it is simple in its performance, because it can be preserved as a record and because it might reveal unsuspected lesions such as tuberculosis, malignancies, pleural adhesions, pleuro-pericardial adhesions, etc.

In conjunction with the film method, the chest should be fluoroscoped, paying especial attention to the precardiac space at the base of the heart, also note the retro-cardiac area, the cardiac tone, frequency of contraction and rhythm.

Time will not permit discussion of the various heart lesions; however, it is necessary to state that we must not become too fanciful in our

claims. Serious efforts have been made to establish auriculo-ventricular ratios and oblique projection ratios as relate to the heart, aorta and chest. These efforts are commendable, but exceedingly limited in their practical value. We all know how difficult it is to dissect the auricles from the ventricles, letting alone the difficulty in definitely recognizing their demarcations in life. The same explanation applies to the fluoroscopic visualization of the thoracic aorta, more particularly the arch; we must acknowledge our inability to trace these structures with any degree of satisfaction.

The heart has to be considered in relation to the thorax both from the standpoint of area and transverse dimension; in this way only, can an appropriate conclusion be drawn. The asthenic type is somewhat vertical in position while the sthenic inclines more towards the transverse. The angle formed at the intersection of the midline of the body and the line portraying the length of the heart may vary from 45 degrees to 50 degrees in the asthenic heart, while it ranges from 50 to 70 degrees in the sthenic.

The tables formulated by Dietlin, Bardeen and Hodges in which height, weight, sex, volume of heart, and cardio-thoracic ratios have been established are invaluable and must be used as bases for interpretation, as they represent the normals.

The aortic arch is frequently involved in hypertension and it is important to observe this very closely; also, I would be remiss in not mentioning the possible presence of syphilitic aortitis, as it tends to appear first just above the aortic valves and is most noticeable in the second oblique position when viewed fluoroscopically. This finding is important as it may be the first finding of a syphilitic infection since even the serologic tests might be negative in 20 per cent. of syphilitic cases.

Along with an accurate estimation of arterial tension, a percentage estimation of albumin, and an electrocardiographic reading, a thorough x-ray examination as herein described will give more substantial evidence in regard to the deadly triad of cardio-renal-vascular integrity and one upon which to base action either for standard insurance or for more accurately rated standard coverage.

DISCUSSION

Harry A. Durkin (Peoria): Mr. Chairman and

Members of the Radiological Section: Dr. Hubeny has given a very conservative estimate of the value of x-ray in cardiology. A routine cardiological examination is perhaps less dependent upon the x-ray than the examinations in other special fields. The gastro-enterologist and the urologist, for instance, would be more or less completely lost were it not for the assistance obtained from their roentgenological confreres. With a good history and careful percussion and auscultation, fortified by electrocardiographic examination, the percentage of diagnostic errors in cardiology is comparatively low. The fact that the heart lends itself very easily to investigation by these more simple procedures accounts for the comparative rarity of x-ray examination.

Percussion, even in good hands, is admittedly inaccurate, particularly when there is great cardiac enlargement or when there is a thick chest, or when the individual has emphysema. Some good clinicians have gone to the extremes of abandoning percussion entirely. I think this is a serious mistake because x-ray is not always available and it behooves most of us to perfect and perpetuate our technique in percussion.

X-ray is particularly valuable in the diagnosis of diseases of the aorta. Ordinary methods are notoriously unreliable in the detection of increased supracardiac dullness. It is possible to miss fifty per cent. of aortic aneurysms by ordinary clinical procedures. If this is so, the percentage of error in the diagnosis of the aortic dilatation which occurs in hypertension and arteriosclerosis must be considerably higher. One can certainly say that we have no other means of detecting tortuosity of the aorta. Serial x-rays are of value in delineating the progress of cardiac enlargement over a period of time and the degree of improvement under treatment.

Like all other methods, it has its limitations. The number of seriously damaged hearts which show no enlargement by x-ray is not inconsiderable. The interpretation of the normal limits of the heart's shape and size is beset with difficulties. Many factors, such as age, size, weight, and build, may produce a number of variations within normal limits and it is quite difficult, in spite of all the tables we have, to determine whether in a given case certain variations are abnormal. In spite of these difficulties, radiology is now accepted as a valuable handmaiden to modern cardiology. We have traveled a long way since 1800, when Sir William MacKenzie wrote: "Indeed, I am doubtful if any x-ray examination of the heart has thrown the slightest light on a cardiac condition."

I am not over-hopeful that the Insurance Companies will accept the value of x-ray in the immediate future. It is only within recent years that they have become conscious of the great value of electrocardiography in the examination of individuals past middle age. If it takes them this long to recognize a relatively simple procedure, I feel that it will be some years before they accept routine x-ray examinations.

Thomas Cantrell (Bloomington): I have been called upon by the Government to make a good many examinations. I just want to speak on one phase of the subject; that is blood pressure. I know there is a great

deal of stress placed upon this. I have sometimes wished the man had died before he invented it. It is of value to the physician but not of value to the patient. If the physician will take his examination and keep it to himself and use it as he does other things, it is all right. He does not comment upon the information he gets from palpation or auscultation, but he does comment entirely too much upon the blood pressure. We have more invalids now in the city of Bloomington going around with high blood pressure, when there is nothing on earth the matter with them, than any other class of patients we have before us, simply because the surgeon who has examined the patient has been very particular to tell him he had blood pressure of 180 or 200.

I just want to voice my sentiment against that. You don't even give your patient the diagnosis you have made, the result of palpation or auscultation or x-ray, but oh how free you are to pass on the blood pressure. In connection with facts in recent literature, I believe they have followed a class of moderately high blood pressure and low blood pressure, and the death rate in the two classes showed such little difference that it was nil.

I found a doctor's blood pressure to be 110 the other day. I expect that man to live to a ripe old age. It is perfectly natural for that individual.

While I do not wish to be understood as saying that the blood pressure is not of importance in diagnosis, I think it is of more value to the doctor in making the diagnosis than it is when given out to the patient.

Dr. James G. Carr, Chicago: There are just two things about this subject which interest me particularly. The discussion I have to offer will be brief, but I would like to know from the roentgenologist if he can say at what level we must determine when a given patient has a moderately hypertrophied heart.

The second point which I would like to emphasize is that in spite of the literature which Dr. Hubeny has so well summarized we are not sure what the relationship is between hypertrophy and disease. Until we are satisfied that the moderately hypertrophied or moderately enlarged heart—which is perhaps a better word because so often we regard the large heart as large because of dilatation rather than hypertrophy—until we have satisfactory evidence that the moderately enlarged heart is pathological and further evidence that the roentgenologist can say with assurance that above a certain standard cardiothoracic ratio, we are dealing with pathological conditions, it seems to me we ought to keep an open mind and keep reminding ourselves that thus far we do not know the significance of borderline cases so far as enlargement is concerned and do not know the significance of the borderline cases as determined by the roentgenologist.

Dr. M. J. Hubeny, Chicago (in closing). I appreciate the discussions of Drs. Durkin, Cantrell and Carr. The chief purpose of my presentation was to call attention to the substantial assistance that a roentgenological examination can render. It is so difficult to appraise practical values, without exaggeration or enthusiasm, be-

cause, frequently a sincere effort to establish an investigation as a fact or conclusion leads to fanciful deductions, of course, this to the undiscerning or inexperienced, results in error.

They are quite right in stating that no one can definitely say the amount of enlargement, if any, present in the borderline case and it is only by a thorough examination, using all available methods that this can be done with greater certainty.

I am sure that Dr. Cantrell did not intend to unqualifiedly condemn blood pressure readings and their significance; no doubt, it is now being realized that there is great latitude in what constitutes normal and how much importance is to be attached to certain variations.

In either event a routine chest examination should be done, because the mensuration is more accurate than the usual clinical methods and because of the discovery of accidental and unlooked-for lesions.

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CAUSES OF OBSCURE FEVERS IN INFANCY AND CHILDHOOD*

CHARLES SCHOTT, M.D.

CHICAGO

By this term, "Obscure Fever," is not meant any new disease, but rather those clinical entities that are met with in every day practice. These conditions cause fever in children that is not determinable by examination for several days, or even for weeks, after the onset of the illness. It is hoped that as this dissertation develops, it may enlighten some as to what may have been encountered and not realized, or not recognized.

In the infant of a few days old, fevers are frequently found. Some, of course, are of simple etiology, and it is not with these that this paper deals. Those of the obscure type are the ones that it is desired to emphasize.

*Read before the Chicago Medical Society, December 14, 1932.

A male infant, six days old, was seen in hospital, private room case, who for two days had a temperature of 100°F. On first examination nothing was found, only that the babe looked more sick than the findings seemed to warrant. On examination, nothing was found, only that the throat had a shiny appearance which seemed abnormal. A culture was taken. Next day a report of positive Klebs-Loeffler was given, and also a membrane was seen on the fauces. The nurse on this case was found to have a membrane on the surfaces of a bilobar tonsil.

Another example: Female infant of five days with temperature of 102°F. for two days. Examination was entirely negative. A catheterized specimen of urine was obtained. Cell count was thirty-five, and real leucocytes were seen. A culture twenty-four hours later gave a colon bacillus. History disclosed that this infant, on delivery, had been actually contaminated by excreta from the mother. A similar case had been seen some time before, in which the fever had been allowed to persist for a longer period before the infant was catheterized.

Another infant, twenty-four hours old, of the ashenic type; by which is meant an infant with feeble cry, dry, loose, scaly skin, responding slowly to external stimuli; whose examination was negative in all other respects, took food poorly, and had a temperature of septic type, ranging from 100° to 102°F. from first twenty-four hours. On the third day, 6% glucose was given by hypodermoclysis and after the third day of this treatment, temperature became normal and the infant responded as to taking food and gaining weight.

In older children, one is often seen with high fever, 102° to 105°F, with rapid respiration, and upon close examination and inspection a mild redness of the anterior pillars of the throat and some edema of the fauces, tonsils and pharynx is found. This throat condition becomes more marked, and is usually at its peak on the third or fourth day when the temperature has entirely receded. Then there is the youngster with temperature of only 100°F, with no pain, but very restless. On examination nothing is found until the ears are looked into. Here blebs are found on one or both ear-drums. This condition improves after three or four days, the ears returning to normal.

Edward K., four years of age, with very rapid difficult respiration, almost obstructive in type, upon examination showing no pathology of any kind; auscultation giving only referred sound from above. Temperature, 101°F., no increase through the day; respiration becoming more difficult and obstructive, and not relieved by intubation; smear showing nothing definite; death occurring in thirty-six hours. The post mortem disclosed only a severe purulent tracheitis with culture of pure bacillus influenzae of Pfeiffer. Another

case similar to this gave a pure culture of hemolytic streptococcus.

Rosalie B., infant of nine months, beautifully nourished, weighing well over 20 pounds, showed rapid respiration and marked cyanosis. Examination was absolutely negative. This being the finding of two other consultants. Temperature was 104°F. when first seen, and continuing a typical septic temperature curve with the peak as high as 106°F., for seven days. X-ray on first day was reported negative. On the fifth day, tubular breathing faintly heard in the upper left posterior thorax. On this day also, x-ray gave shadow in this location. The infant's temperature became normal, by crisis, on the seventh day. Blood count in this case was never over 15,000.

Mary S., infant of four months, when seen had rapid, difficult respiration, marked cyanosis, and very slight hyperemia of throat, respiration becoming more labored for forty-eight hours, when typical asthmatic findings were heard throughout the thorax, with the throat becoming more hyperemic. Temperature was never over 100°F. This same picture is seen many times in older children, and with them, too, is found an increasing hyperemia of throat.

A child, four years of age, was seen with rapid and difficult respiration. Temperature 102°F., persisting for several days. There were no findings of a positive nature until the fourth day, when glands on left side of neck seemed slightly enlarged. On the fifth day a post-tonsillar infection was found. These foregoing cases are presented because they are all similar in the inspection picture. Yet, all had fevers that were obscure, and each of these patients had different final pathology. The etiology and pathogenesis were, without question, much the same.

Again. A child of seven years with a low grade fever, 99° to 100°F., was seen. History disclosed that three or four weeks before, the child had a throat condition, and discharge from the left ear which, at time of examination, was dry. There was a complaint of headache, not severe at first. Examination in all other respects gave no positive evidence. After the fourth or fifth day the headache became more severe. A blood count and spinal fluid were normal. After the seventh day, with headache increasing, a second spinal puncture was done and many cells, in the hundreds, were found. Culture negative. An operation was performed, and a brain abscess was found on the left side where the ear trouble had been four weeks previously.

Between the ages of two and four, there is often encountered the child who gives a picture of mild upper respiratory infection with all the findings in the throat that this disease presents, and a temperature to correspond with its severity. For example: the case of John H., age three. The upper respiratory symptom complex subsided, but the temperature persisted, rising to as high as 101°F. This for many weeks; (in some cases it may be as long as six or eight). X-ray findings were of no value. All laboratory findings were negative. A blood count persistently showed mild lymphocytosis. At the end of the sixth week, a Manteau, 1 to

5000, was done giving positive reaction. After the eighth week the temperature disappeared. It is to be deduced that the patient had, in this period, received his initial tuberculous infection and had developed a degree of immunity.

Female child, three years old, when first seen had been ill for two weeks. Attending physician gave history and findings of mild upper respiratory disease. The urine had been negative and the throat had cleared. The day before, the patient was seen by attending physician, who reported observing a necrotic spot on the posterior right lower gum. This spot had increased on second day and a blood count gave the typical findings of an acute splenomyelogenous leukemia. It should be noted that this child's disposition had changed markedly in the five or six days preceding the finding of the distinctive pathology. Throughout the time after the upper respiratory symptoms had subsided, the temperature stayed between 100° and 101°F. This patient died within forty-eight hours after blood count was taken.

Not unusual is the child seen very often, who rapidly develops a temperature of 103° to 105°, and complains of pain almost everywhere; stiff neck, stiffness of legs, and discomfort generally. Examination shows tenderness wherever palpable glands are found; cervical, axillary, inguinal, etc. Next day, and often when first seen, urticarial wheals are found. The history is always the same in these youngsters. Toxin-antitoxin had been given, often years before, and recently, within a week, some other serum, usually antitetanic, has been administered. This clinical picture is seen so frequently that too much emphasis cannot be placed on it.

Jack H., boy, aged 14 years, was seen with the history that he had an evening temperature of 104°F. His examination was entirely negative until the fifth day when he complained of pain in his left shoulder. This all had occurred at a camp in Northern Wisconsin. The foregoing history was given over the phone by physician from that point. Patient was brought from there, and when seen on fifth day gave the appearance of being very toxic. He had swelling and redness of the left shoulder, a blood count of 20,000, polymorphonuclears 80%. The shoulder was opened and over spine of scapula pus was found. Twenty-four hour blood culture gave pure culture of staphylococcus albus. The same organism was recovered from pus from shoulder. From then on all joints and the thoracic cavity on both sides became involved. The same organism was recovered from pus from all points of localization. Death occurred in this patient at the end of the seventh day from onset.

Olga B., female child, aged 7 years, had septic type of temperature each day, from 104° to 106°F. This for two weeks and a drop each day to subnormal. Examination was entirely negative on all the days patient

was seen. Repeated blood counts gave leucopenia of 3,500 to 5,000, and each count gave uniformly a lymphocytosis from 60 to 70%. Widal and paratyphoid reactions were negative. Blood agglutinated with Melitensis serum.

Infants and younger children are seen frequently with a temperature between 104° to 105°F. This each day for exactly four days, when the temperature drops to normal and a widespread rash of a bright red maculo-papular confluent type appears on the body. The typical erythema subitum. No other pathology is found.

These cases are cited as not rare, but are the types of illnesses that every physician meets with in his every day practice. That the term "Obscure Fever" may be applied to them, it is felt, is not incorrect. Each one of these cases, or the type it represents, was seen in consultation with the physician who was attending the case. There are cases where the fever is never explained. That is readily admitted. These cases are not as frequent as many physicians believe. For this reason this paper is presented—to emphasize that with careful examination and watchfulness, an honest diagnosis may be made, often before a real tragedy occurs. Some other types of illnesses with fevers that are obscure could be given, but all cannot be covered in the limited time.

MUCIN THERAPY: REPORT OF TWO CASES OF GASTRO-JEJUNAL ULCER WITH RECURRENT HEMORRHAGES*

J. ROSCOE MILLER, M.S. M.D. AND
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CHICAGO

Mucin as a therapeutic agent in the treatment of gastric ulcer was first introduced by Fogelson.¹ His work was based on earlier reports of Pavlov² and Ivy³ which suggested that mucin served as a protective secretion and played a role in the neutralizing mechanism of the stomach.

Fogelson prepared mucin for clinical use by precipitation from a dilute hydrochloric acid solution of gastric mucosa at a p_H of 4.5 after the addition of an equal volume of alcohol. When dried and neutralized, this product was

*From the Department of Medicine, Northwestern University Medical School.

mucoid, viscous, readily soluble and had a high combining power, one gram of the powder combining with about 15 c.c. of 0.5 per cent. hydrochloric acid. This powder was administered to 12 patients, all of whom had classical histories and x-ray evidence of ulcer. Complete relief from symptoms resulted in all of the patients studied.

Following publication of the original article, reports were made by Atkinson⁴ and Brown, Cromer, Jenkinson and Gilbert.⁵ The former cited 85 carefully studied cases in which all experienced relief from subjective symptoms while on the regime. No failures are described. One patient died and at postmortem was found to have had a carcinoma of the head of the pancreas. The second report reviewed 37 cases, chosen because they had been intractable over a long period on strict management. All but one of the patients studied were relieved objectively and subjectively by mucin. No recurrences were reported. The one failure was subjected to surgery and a red, granulomatous tumor mass was found around a penetrating ulcer.

During the past two years we have used mucin in treating seven cases of peptic ulcer. These patients were selected because each gave a classical history of ulcer together with definite x-ray evidence. Three cases had hemorrhage and one a perforation prior to treatment with gastric mucin. No other therapy was resorted to except a bland diet and antispasmodics. The dosage of mucin varied from 40 to 90 grams each day, given either dry or in some vehicle such as milk, malted milk or broth.

Three patients are still taking mucin and are symptom free. Two have discontinued its use and when last seen had no complaints. The remaining two cases have had recurrent hemorrhages while on the mucin regime and as no mention is made of this in the reports which have appeared to date, we wish to review these two cases.

Case 1. C.H.B. a man, aged 64 years, entered Passavant Memorial hospital, June 29, 1931, because of weakness and black stools. In 1903 the patient first began to have epigastric distress coming on before meals and relieved by food. In the following 8 years the symptoms came in biennial cycles lasting from 6 to 8 weeks each time. Several gastric hemorrhages occurred during this period at which time he would vomit blood and his stools would become black. In March, 1911, a duodenal

deformity was demonstrated by x-ray examination and the following month a gastro-enterostomy was performed. The patient remained practically symptom free until 1925, when without prodromal symptoms of any kind he had a profuse hemorrhage accompanied by hematemesis and melena. Since that time he has had recurrences of the bleeding every six months. Two days previous to admission he noticed that his stools were black. He did not vomit nor did he have any distress. The inventory by systems was essentially negative. The family history was interesting in that one brother, two sisters and two nephews all have duodenal ulcer.

Physical examination revealed a well nourished man whose skin and mucous membranes were pale. B.P. 140/70, Pulse 78, Temp. 98.6.

The pupils were contracted (Morphine had been given prior to admission). There was an arcus senilis. The mouth and throat were negative except for a mild gingivitis. The supra and infra-clavicular spaces on the right side were sunken and there was impaired resonance over this area. There were no rales. The heart borders were within normal limits. There was a soft systolic blow at the apex. The abdomen was negative except for an old upper midline scar.

Laboratory: Erythrocytes 3,900,000; hemoglobin 55% (Newcomer); leucocytes 12,000. The Wassermann was negative. The urine examination was essentially negative. The stools were black in color and gave strongly positive tests for blood. The electrocardiogram was normal. The patient was treated symptomatically, morphine (gr. 1/6), nothing by mouth and fluids per rectum. Two days later he was placed on a modified Sippy regime. The erythrocyte count fell to 2,900,000 and the hemoglobin to 44% (N). July 3 a blood transfusion of 500 c.c. was given. July 9 alkalies were discontinued and mucin therapy begun. He was discharged from the hospital July 16. At this time he was taking a bland diet and 70 grams of mucin each day. Half of the mucin was taken in capsules and the other half in milk and malted milk.

His blood picture improved, the stools were normal and he suffered no discomfort until Sept. 18 when he contracted an upper respiratory infection. At this time he discontinued the mucin. September 28 he was again admitted to the hospital with evidence of hemorrhage. The stools were black, positive when tested for blood and the hemoglobin was 69%. He had suffered no complaints referable to the gastro-intestinal tract. The patient was again given mucin, 90 grams each day in solution, and this was continued after discharge from the hospital. Six months later another hemorrhage occurred. This however was not marked. He is at present on the same regime as when he left the hospital for the last time, and has no complaints.

Case 2. C.B.B. a man, aged 53 years, entered Passavant Memorial Hospital, Nov. 27 1931, complaining of weakness, pain in the abdomen and black stools. The patient gave a long history of gastric complaints dating back to 1891. In 1895 a diagnosis of duodenal

ulcer was made by Dr. S. Weir Mitchell. For years afterward the patient had frequent attacks of pain in the upper abdomen. In 1901 a gastric analysis showed a total acidity of 120. In 1903 he suffered a severe attack of angioneurotic edema. February 1920, a cholecystotomy and gastro-enterostomy were performed. A ligature was placed about the pyloric end of the stomach. In January 1927, he had an attack of pain in the epigastrium and for the following three days he noticed that his stools were black.

In February 1928, he had an appendectomy and August of the same year had another hemorrhage. January 1930, the gall bladder was removed. It was found to contain several stones. No sign of ulcer was found. The ligature, which at this time had been in place for 10 years was removed from around the pylorus. Recovery was uneventful.

Examination revealed a well nourished white male who looked ten years younger than the stated age. The skin and mucous membranes were pale. B.P. 118/78. Pulse 72, Temperature 98.4. There was an old injury to the left eye. There were some moist rales in the base of both lungs which disappeared upon deep inspiration. The heart was essentially negative. The abdominal wall was flaccid, there was no tenderness, there were old scars of a bilateral herniotomy, an appendectomy and a gastro-enterostomy and cholecystectomy. There were no other physical signs of note.

Laboratory: Erythrocytes, 3,200,000, leucocytes 7000 and hemoglobin 26% (N). The differential and platelet counts were normal. There was a moderate anisocytosis, slight achromia and some poikilocytosis. The Wassermann was negative. The bleeding and coagulation times were normal. Blood calcium was 12.0 mg. per 100 c.c. The urine contained many hyalin casts and a trace of albumin. Stools contained blood and fermentation tests were strongly positive for B. Welchii. X-ray and fluoroscopic examinations, made 10 days after entrance, showed no abnormality of the colon.

Treatment consisted of powdered mucin, 90 grams each day, divided into 11 doses and given in milk. The diet was soft. Tincture of belladonna (M XV) 1 c.c., and a hematinic were given three times a day.

The patient remained in the hospital for a period of two weeks. During this time there was a slight increase in the red blood cells and hemoglobin. Following his discharge from the hospital he continued to take mucin (90 grams) and remained on a bland diet. His improvement was rapid until at the end of 4 weeks the erythrocyte count was 4,800,000 and the hemoglobin 100%. There was an increase of 14 pounds in weight. At this point the hematinic was discontinued and the mucin reduced to 60 grams each day. The patient still complained of occasional epigastric distress and of flatulence. May 24 the patient felt very well and the mucin was reduced to 40 grams per day. On June 21 he complained of pain under the lower part of the sternum. At this time he was suffering from a sore throat and sinus infection. Mucin had been

taken continuously for 7 months. June 23 all epigastric distress had disappeared and the head infection was much improved. On this date the patient first noticed that his stools were black, and a sample was strongly positive for blood. A blood count made on the following day showed 3,890,000 erythrocytes and hemoglobin of 74%. He went to bed and resumed a liquid diet, the dosage of mucin remaining at 40 grams daily. The stools became a normal color, the patient complained of no symptoms and in one week he returned to work and his previous regime.

July 15 the hemoglobin had risen to 105 per cent. and the erythrocytes to 4,800,000. July 19 another hemorrhage occurred with tar colored stools which persisted for about one week. At this time the patient complained of malaise and dull pains in the lower extremities. There was again a decrease in the hemoglobin and red count, but no complaint of abdominal discomfort.

COMMENT

Seven cases of peptic ulcer treated with gastric mucin are reported. Two of these were probably gastro-jejunal ulcer and are reported in detail. Both had several hemorrhages prior to mucin therapy and both had recurrences while on this regime. Recovery was rapid after each hemorrhage and there was an alleviation of symptoms despite the repetition of bleeding.

It is of interest that in three instances hemorrhage followed an acute infection.

30 North Michigan Ave.

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Society Proceedings

RANDOLPH COUNTY

The regular monthly meeting of the Randolph County Medical Society convened in Evansville on Thursday evening, October 12. Luncheon was served by the ladies of the Evangelical Church where the meeting was held. Dr. Beattie of Evansville opened the discussion on professional ethics and Dr. Templeton of Pinckneyville led the discussion on medical fees. All physicians and some of their wives took part in the discussion. It was a very successful meeting with a good attendance and an interesting program.

O. C. Church, M. D., Secretary.

Marriages

Theodore Hartley, Bradford, Ill., to Miss Ethel McCarron of Chicago, October 10.

William F. Myers, Coal Valley, Ill., to Miss La Verne Madison of Moline, June 28.

Personals

Dr. Charles D. Center, president-elect of Illinois State Medical Society, is recovering in Blessing hospital, Quincy, from injuries received, October 8, in an automobile accident.

Dr. J. P. Greenhill of Chicago addressed La Porte County Medical Society on "Recent Advances in Obstetrics and Gynecology, October 19.

Dr. Charles H. Mayo, Rochester, Minn., among others, addressed the Chicago Association of Commerce, October 11, on "Good Health Essential for Sustained Recovery."

At a meeting of the DeKalb County Medical Society, September 28, Dr. Clement L. Martin, Chicago, spoke on anorectal diseases.

Dr. Francis E. Senear, Chicago, discussed "Role of Fungus Infections in Dermatology" before the Will-Grundy Medical Society, Joliet, September 27.

Dr. John A. Wolfer, Chicago, spoke on "Surgical Management of the Jaundiced Patient" before the Peoria City Medical Society, October 3.

Dr. Charles P. Emerson, Indianapolis, spoke, among others, before the Vermilion County Medical Society, October 3, on "Lessons from Medicine of the Orient."

At a meeting of the Williamson County Medical Society in Marion, October 3, among others, Dr. Frank J. Jirka, state health officer, Springfield, discussed epidemic encephalitis.

Speakers before the Chicago Council of Medical Women, October 6, were Drs. Alice K. Hall and Georgiana D. Theobald on "Treatment and Education of the Profoundly Deaf Child" and "Ocular Tumors in Children," respectively.

At a meeting of the Chicago Pathological Society, October 9, Dr. Edward H. Hatton gave his official address as president on "The Origin and Pathologic Significance of the Epithelium Found About the Roots of Teeth."

The Chicago Society of Allergy was addressed October 16 by Drs. Isadore Pilot and Isidor Harrison Tumpeo on "Focal Infection and Allergy" and "Hyperergic Response of Allergic Children to Infection," respectively.

The Chicago Gynecological Society was addressed at its fifty-sixth annual meeting, October 20, by Gordon J. Laing, Ph. D., on "The Medicine Man," and Dr. William F. Peterson, "Meteorological Associations of Disease."

At a meeting of the Chicago Ophthalmological Society, October 16, Drs. Agnes Beulah Cushman and Samuel I. Meyer presented reviews of the 1932 literature on trachoma, tuberculosis, retinal detachment and intra-ocular tumors, and glaucoma, respectively.

The McDonagh Society for Clinical Research was addressed, October 20, by Drs. Paul G. Pomeroy, Ottawa, and Kamil Schulhof on "Treatment of Polyarthrititis" and "An Alleged Mechanical Detector of Disease," respectively.

Dr. Ralph Pemberton, Philadelphia, addressed a joint meeting of the fifth councilor district of the Illinois State Medical Society and the Sangamon County Medical Society, October 5, on the control of rheumatism.

Leonard F. Weber of Chicago spoke on "Common Diseases of the Skin," illustrated with lantern slides, before the Kane County Medical Society at the Sherman Hospital, Elgin, October 11.

Doctor James P. Simonds, professor of pathology at Northwestern University Medical School, is now Illinois state chairman of the American Society for the Control of Cancer.

News Notes

—The December 7 meeting of the Sangamon County Medical Society will take the form of a Symposium on the Newer Methods of Diagnosis and Treatment of Chest Diseases. The following men from the Washington University School of Medicine, St. Louis, will be in charge of the program:

—Millard Fillmore Arbuckle, Assistant Clinical Professor of Oto-Laryngology; Evarts Ambrose Graham, Bixy Professor of Surgery; Jacob Jesse Singer, Associate Professor of Clinical Medicine.

—For the fifth consecutive year the Educational Committee has been requested to sched-

ule lectures for the Pre-Medical Pre-Dental Club of Y. M. C. A. College. The first of the series was given on October 20.

—Dr. George Minot, professor of medicine, Harvard Medical School, Boston, delivered the first Jessie Horton Koessler Lecture of the Institute of Medicine of Chicago, October 23, on "Anemia, Etiology and Treatment." The meeting was held jointly with the Chicago Society of Internal Medicine at the Chicago Woman's Club.

—Dr. Alfred Blalock, associate professor of surgery, Vanderbilt University School of Medicine, Nashville, gave the fifth annual Arthur Dean Bevan Lecture of the Chicago Surgical Society at the Chicago Woman's Club, October 20 on the subject: "Acute Circulatory Failure as Exemplified by Shock and Hemorrhage."

—Arrangements have been completed by the Illinois State Health Department to survey the health work and needs of schools in Elgin, Nokomis, Litchfield, Lebanon, Newton, Oblong, Altona and Browning, as a part of a state-wide health program. The school surveys, which are made on request, are conducted by Dr. Robert C. Cook of the division of child hygiene.

—The Illinois State Health Department instituted a series of scientific programs for county medical societies at a meeting of the Fulton County Medical Society in Canton, October 18, as part of a campaign against epidemic diseases. Four illustrated lectures covering encephalitis, infantile paralysis, influenza, pneumonia, diphtheria, scarlet fever and other epidemic diseases will be presented at each meeting by staff members of the health department. Lectures have also been scheduled for meetings in Charleston, Champaign, Danville, Marion, East St. Louis and Quincy.

—Members of the staff of St. Louis University School of Medicine presented a program before the Adams County Medical Society in Quincy, October 9, as follows:

Dr. Cyrus E. Burford, Nephropexy and Ureterolysis as Conservative Surgery.

Dr. William T. Coughlin, Injuries to the Brain.

Dr. Ralph A. Kinsella, Encephalitis.

Dr. William E. Leighton, Evolution of Spinal Cord Surgery.

Dr. LeRoy Sante, Radiation in the Treatment of Malignant Disease.

Dr. August A. Werner, The Sex Hormones.

Alphonse M. Schwitala, S. J., Ph. D., dean of the School, made an address at the banquet on the report of the Committee on the Costs of Medical Care.

—Dr. Chevalier Jackson, professor of bronchoscopy and esophagoscopy, Temple University School of Medicine, Philadelphia, will address the Chicago Medical Society at the first Fall meeting, November 1, open to the public, on "Bronchiectatic Septic Tank and Its Prophylaxis." This talk will be discussed by Drs. Samuel J. Pearlman and Carl A. Hedblom. Dr. Jackson will also speak at a reception and dinner to be held in his honor in the dining room of the Medical Arts Club before the meeting. His subject will be "Is It Advisable to Treat Post-Tuberculous Cicatricial Stenosis of the Larynx?" The dinner meeting is being sponsored by the medical society and its Aux Plaines branch with the Chicago Laryngological and Otological and Chicago Tuberculosis societies.

—Dr. Hugh H. Young, clinical professor of urology, Johns Hopkins University School of Medicine, Baltimore, presented the fifth annual William T. Belfield Lecture before the Chicago Urological Society at the Palmer House, October 18. Subject: "Diagnosis and Treatment of Prostatic Obstruction."

—The Illinois Radiological Society, at its quarterly meeting, October 29, 1933, in Peoria, presented the following program:

Dr. Flinn, Two cases of Chest Pathology (St. Mary's, Decatur).

Dr. W. G. Bain, two cases of Bone Pathology (St. John's, Springfield).

Dr. H. Swanberg, two cases of G. I. Pathology (Quincy).

Dr. Ivan Brouse, two cases of Gall Bladder Pathology (Jacksonville).

Dr. P. B. Goodwin, two cases of Urological Pathology (St. Francis, Peoria).

Dr. E. G. C. Williams, two cases of Therapy (Danville).

Dr. Robert McIntosh, Bloomington, "Demonstration of the Prostatic Urethra."

Dr. Arthur Sprenger, Peoria, "Renal Tumors."

Dr. Roswell Pettit, Ottawa, "1933 Radiological Observations in Europe."

Deaths

HAROLD ALBERT BACHMANN, Chicago; University of Pennsylvania School of Medicine, Philadelphia, 1917; a Fellow, A. M. A.; member of the Central States Pediatric Society; on the staff of St. Luke's Hospital; aged 41; died, September 21, of angina pectoris.

JULIUS BUZIC, Chicago; Universität Basel Medizinische Fakultät, Basel, Switzerland, 1915; a Fellow, A. M. A.; aged 72; died, May 26, of coronary thrombosis and chronic myocarditis.

JOHN CLARK CORBUS, JR., Mendota, Ill.; State University of Iowa College of Medicine, Iowa City, 1884; member of the Illinois State Medical Society; aged 72; died, September 16, in the Washington Boulevard Hospital, Chicago, of pneumonia.

ARTHUR MILLS CORWIN, Chicago; Rush Medical College, Chicago, 1890; a Fellow, A. M. A.; at one time demonstrator of physical diagnosis at his alma mater and professor of physical diagnosis, College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, associate professor of otology, rhinology and laryngology, Chicago College of Medicine and Surgery and the Bennett Medical College; fellow of the American College of Surgeons; aged 69; on the staffs of the Chicago Eye, Ear, Nose and Throat Hospital and the West Suburban Hospital, Oak Park, Ill., where he died, September 9, of chronic nephritis, uremia and myocarditis.

LOUIS HENRY ENOS, Alton, Ill.; Hahnemann Medical College and Hospital, Chicago, 1918; member of the Illinois State Medical Society; aged 43; on the staff of St. Joseph's Hospital, where he died, October 4, following an operation for appendicitis.

HENRY E. GOLDBERGER, Chicago; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1903; a Fellow, A. M. A.; aged 63; died, September 23, of carcinoma of the bladder.

CHARLES JONES GOSE, Kinderhook, Ill.; Missouri Medical College, St. Louis, 1899; formerly postmaster of Kinderhook; aged 61; died, September 22, in the Blessing Hospital, Quincy, of a self inflicted bullet wound.

CHALMER ROSWELL HECOX, Golden, Ill.; College of Physicians and Surgeons, Keokuk, Iowa, 1897; member of the Illinois State Medical Society; aged 58; died suddenly, September 8, of heart disease.

CHARLES WILLIAM HOLLNAGEL, Chicago; Chicago College of Medicine and Surgery, 1913; aged 58; died, September 26, of chronic myocarditis and coronary adhesion.

JOSEPH MILTON LAWSON, Sidney, Ill.; University of Michigan Medical School, Ann Arbor, 1885; a Fellow, A. M. A.; aged 75; died, September 25, in the Burnham City Hospital, Champaign, of cholecystitis.

JAMES BUCKNER LEWIS, Salem, Ill.; Eclectic Medical Institute, Cincinnati, 1878; aged 80; died, August 29, of carcinoma of the prostate.

MYRON CORY LYONS, Winnetka, Ill.; New York University Medical College, 1896; aged 73; died, August 13, of heart disease.

KATE A. MACHIN, Macomb, Ill.; Keokuk (Iowa) Medical College, 1898; member of the Illinois State Medical Society; aged 72; died, August 6, of carcinoma of the liver.

J. CLINTON MAXFIELD, Hettick, Ill.; St. Louis College of Physicians and Surgeons, 1891; aged 72; died, August 12, of cardiac asthma.

JOHN K. MORADIAN, Chicago; National Medical University, Chicago, 1897; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1901; member of the Illinois State Medical Society; aged 61; died, August 13, of bronchopneumonia and myocarditis.

CHARLES S. NELSON, Springfield, Ill.; Missouri Medical College, St. Louis, 1891; a Fellow, A. M. A., and former Councilor of Illinois State Medical Society; aged 73; died, September 18, in a local hospital, of pneumonia.

VINCENZO NUZZO, Chicago; Regia Università di Napoli Facoltà di Medicina e Chirurgia, Italy, 1902; member of the Illinois State Medical Society; aged 60; died, June 7, of cerebral thrombosis and cerebral hemorrhage.

OSCAR OFNER, Chicago; Hungarian Royal Pázmány Petrus University of Sciences, Medical Faculty, Budapest, Hungary, 1898; member of the Illinois State Medical Society; fellow of the American College of Surgeons; on the staffs of St. Elizabeth's, St. Joseph's and Alexian Brothers' hospitals; aged 59; died, October 2, of heart disease.

JAMES CLAUDE PAINE, Peoria, Ill.; Northwestern University Medical School, Chicago, 1898; serving during the World War; aged 58; died, August 17, of a self-inflicted bullet wound.

CHARLES C. PECK, Harvard, Ill.; Hahnemann Medical College and Hospital, Chicago, 1895; member of the Illinois State Medical Society; formerly county coroner; at one time proprietor of a hospital bearing his name; aged 62; died September 17.

PHINEAS A. RENIE, Union, Ill.; Hahnemann Medical College and Hospital, Chicago, 1891; member of the Illinois State Medical Society; aged 66; died, August 18, as the result of injuries received in a fall several weeks ago.

FRANK HENRY RUSSELL, Eldred, Ill.; College of Physicians and Surgeons, Keokuk, Iowa, 1888; aged 70; died, September 10, of chronic nephritis.

HENRY CLYDE TELFORD, Ottawa, Ill.; University of Michigan Homeopathic Medical School, Ann Arbor, 1905; aged 61; died, June 22, in the Ryburn Hospital, of peritonitis and ruptured appendix.

T. W. WILLIAMS, Litchfield, Ill.; American Medical College, St. Louis, 1879; aged 78; died suddenly, August 31, in St. Luke's Hospital, Davenport, Iowa, of hemorrhage due to duodenal ulcer.

SOLOMON L. ZELTNER, Chicago; Rush Medical College, Chicago, 1895; member of the Illinois State Medical Society; aged 71; on the staff of St. Mary of Nazareth, where he died, August 11, of heart block.

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Book Review

DISEASES OF THE CHEST AND THE PRINCIPLES OF PHYSICAL DIAGNOSIS. BY GEORGE WILLIAM NORRIS, A.B., M.D., formerly professor of Clinical Medicine in the University of Pennsylvania; Chief of Medical Service "A," Pennsylvania Hospital; and Henry R. M. Landis, A.B., M.D., Sc.D., Professor of Clinical Medicine in the University of Pennsylvania; Director of Clinical and Sociological Departments of the Henry Phipps Institute of the University of Pennsylvania. With a Chapter on the Transmission of Sounds Through the Chest by Charles M. Montgomery, M.D., Formerly Physician to the Phipps Institute, Philadelphia; and a Chapter on the Electrocardiograph in Heart Disease by Edward B. Krumb-

haar, Ph.D., M.D., Professor of Pathology, University of Pennsylvania, School of Medicine. Fifth Edition. Revised. 997 pages with 478 illustrations. Philadelphia and London: W. B. Saunders Company, 1933. Cloth, \$10.00 net.

In this edition the author has attempted to keep the book abreast of the times. New material has been added and many sections have been revised. Little has been omitted that is of practical value.

THE MEDICAL CLINICS OF NORTH AMERICA: (Issued serially, one number every other month.) Volume 17, Number 2. (Chicago Number—September, 1933) Octavo of 233 pages with 36 illustrations. Per Clinic Year, July, 1933 to May, 1934. Paper, \$12.00; Cloth, \$16.00 net. Philadelphia and London: W. B. Saunders Company, 1933.

The contributors to this number are Doctors Abt, Barborka, Birch, Carr, Carroll, Elliott, Foley, Gilbert, Heinz, Gaffe, Jenkinson, Kenyon, Oliver, Pernokis, Pollock, Portis, Rawson, Sloan and Tice.

OBSTETRICS AND GYNECOLOGY. By 80 Leading Specialists. Edited by ARTHUR HALE CURTIS, M.D., Professor and Head of the Department of Obstetrics and Gynecology, Northwestern University Medical School; Chief of the Gynecologic Service, Passavant Memorial Hospital, Chicago, Ill. Complete in 3 Volumes and Separate Desk Index. 3500 pages with 1664 illustrations, many in colors. Philadelphia and London: W. B. Saunders Company, 1933. Per set, Cloth, \$35.00 net.

This volume deals with displacements and relaxations, disturbances of function, endocrines, special diseases and complications and special topics. With this volume goes an index to volumes one to three.

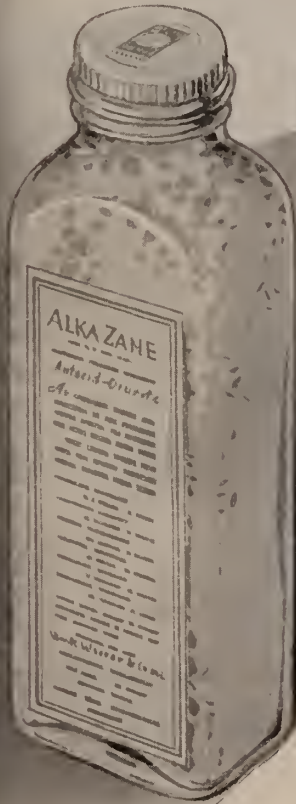
RECORD—LIBRARIAN'S MANUAL. A guide to organizing, classifying and filing clinical records and medical literature. By CARL E. BLACK, M.D., St. Paul, Minn. Bruce Publishing Company, 1933. Price \$2.00.

FOOD, NUTRITION AND HEALTH. BY E. V. McCOLLUM, AND J. ERNESTINE BECKER. Third edition. Rewritten. Baltimore, Md., 1933. Price \$1.50.

The authors of this work are widely known for their contributions to research in nutrition. This book affords its readers information to discriminate between fact and fallacy in advice about foods.

THE TECHNIC OF LOCAL ANESTHESIA. BY ARTHUR E. HERTZLER, M.D. Fifth Edition with 148 illustrations. St. Louis. The C. V. Mosby Company, 1933. Price \$5.00.

This work differs essentially from other books on local anesthesia in that it recommends the use of minimum amounts of solutions, not because of safety, but because a more accurate technic is possible than when large amounts of liquids are injected haphazardly. It advocates infiltrative anesthesia rather than regional blocking because of constriction of vessels is secured thereby which aids in exact anatomic operating.



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(Continued on page 30)

ILLINOIS PERIODIC PHYSICAL EXAMINATION RECORD*

Case No.

Name Age Height Weight usual present normal

Temp. (3 min.) Pulse Rate { Seated (before exercise)
 { Standing (before exercise)
 { 60 sec. after exercise (sufficient to increase pulse to 110)

Bl. Pres.: Sitting { Sys. Lying { Sys.
 { Dias. { Dias.

Hearing { R. Vision { R.
 { L. { L.

Urine: Color Reaction Sp. Gr. Alb. Sugar
 Microscopic

1. (Standing)

- (1) Posture: erect stooped Lateral curvature
- (2) Superficial glands cervical axillary inguinal epitrochlear
- (3) Abdomen: flat Pendulus
- (4) Arms defects
- (5) Legs big veins scars
- (6) Feet: flat painful deformed
- (7) Skin Hands
- (8) Nutrition Hernial rings
- (9) Chest: expir. inspir. Romberg

2. (Sitting)

- (1) Scalp Patellar reflexes
- (2) Eye reflexes to light to distance
- (3) Nose: conformation air passages free obstructed discharge
- (4) Teeth: caries devitalized crowned
- (5) Gums: healthy retracted inflamed
- (6) Tongue: clean coated moist dry
- (7) Pharynx: ulcers scars tonsils
- (8) Ears: conformation discharge
- (9) Heart: locate apex (measure from mid-line—state interspaces) character of sounds
- (10) Lungs: abnormal findings

3. (Lying)

- (1) Abdomen: palpation tender tumors
- (2) Liver: percussion tender palpable
- (3) Spleen: percussion tender palpable
- (4) Kidneys: palpable tender
- (5) Rectum: inspection digital findings
- (6) Male Genitalia
- (7) Female Genitalia and pelvis

4. Summary: defects of function and structure and errors of habit

5. Advice given to the patient

*Prepared by the Illinois State Medical Society.

Copies of this physical examination record may be secured from Doctor Harold M. Camp at Monmouth, Illinois, or the Educational Committee, Illinois State Medical Society, 185 North Wabash Avenue, Chicago.

HISTORY

(This side to be filled in by the person to be examined)

1. Name Country of birth.....Date of birth.....
2. AddressRace
3. Single, married, widowed, divorced.....
4. Occupation
5. How often have you changed your work?.....Why?
6. Is your work dangerous or unhealthy?.....
7. Is it indoors or out?.....
8. Is it light where you work?.....Dark?.....Dusty?Smelly?.....Noisy?.....Crowded?.....
9. At work are you usually seated, standing, or walking?
10. How many hours a day do you work?.....How many days a week?.....
11. Have you a room and bed to yourself?.....With window open?.....
12. What are your hours of sleep?.....Is your sleep restful?.....By what is it disturbed?
13. Where do you eat your meals?.....
14. How much time do you take for each meal?.....
15. Of what foods are you especially fond?.....
16. How much do you drink daily of:
 WaterTeaSoft drinks
- MilkCoffee.....Alcoholic drinks
17. Do you eat candy?.....
18. Do you have a bowel movement daily without the use of drugs?.....What laxative do you use?.....How often?Do you have pain or bleeding with bowel movement?.....How often?
19. Have your menstrual periods been regular?.....
20. Have they interfered with your usual occupations?
21. Have pregnancies and confinements been free from accidents?
22. How often do you bathe?.....
23. What regular exercises do you take in addition to your work?.....
24. Do you share in church, social, political, club, or trade associations?.....
25. What are your pleasures or recreations?.....
26. Have you had any of the following diseases and at what ages?
 TuberculosisScarlet feverTonsilitis
- MalariaDiphtheria.....Frequent colds.....
- RheumatismTyphoid feverSyphilis or gonorrhea.....
27. Do you have dyspepsia?.....
28. Do you have headaches?.....
29. Are you short of breath on going up stairs?.....
30. Do you catch cold easily and often?.....
31. Are you subject to sore throats?.....
32. Have you been vaccinated against small pox, typhoid fever, diphtheria?.....When?
33. Have you had any accidents, broken bones or surgical operations?
34. How often do you consult you dentist?.....
35. Are you as well at present as formerly?.....If not, why?.....
36. Do you remember any important diseases of your parents or family which may have affected your own health?

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1M-11

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TEMPERATURE (Mean monthly— 40-year average)	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
	49.7	52.2	57.5	54.3	71.4	77.4	82.7	69.7	79.2	68.1	57.5	49.8
RAINFALL (In inches— 40-year average)	8	9.6	81	32	14	23	24	24.6	10	6	7.6	Total 11.57
HUMIDITY Monthly AM (40-year average)	61.	55.6	44.8	40.4	28.4	29.3	54.3	57.3	47.1	46.8	57.1	74.2
	PM	35.3	27.7	22.4	22.6	15.9	17.7	36.7	35.7	29.0	26.5	41.1
												Aver 49.5
												29.9

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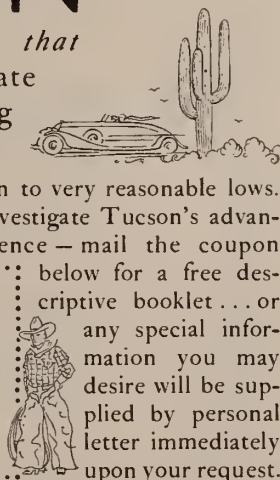
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methods of its treatment that the world has ever seen. That this is not due merely to the dissemination of new knowledge, to those strata of society which previously had never thought, and which are now incapable of logical thought, is amply demonstrated by the growth of cults with a clientele made up in large measure of those members of society who have been by tradition and training accustomed to thinking. The aberration of their mental processes is not due to moronic heredity but perhaps in large measure to lack of contacts with enough individuals with sound common sense.—Wilson, L. B.: *Minnesota Med.* 11:365 (June), 1928.

ABUSE OF THE DOLE SYSTEM

Daily Mail, London, England: Two glaring cases of how the dole is being abused came before the courts yesterday.

Edward John Owen, aged 60, of Middlemore-road, Northfield, who was summoned at Birmingham for deserting his wife, was said to have £3,000 invested and to have drawn the dole since Jan. 7.

He admitted that he:

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£200 London County Council stock at 5 per cent.

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£12 in the Postoffice.

Owen offered to pay his wife 27s a week, and she accepted it.

(Continued from page 26)

Perry	F. B. Hiller, Pinckneyville	H. I. Stevens, Tamaroa.
Piatt	W. E. Burgett, Bement	J. H. Holmes, Monticello.
Pike	J. E. Goodman, Pleasant Hill	W. W. Kuntz, Barry.
Pope	No Society.	
Pulaski	H. J. Elkins, Mounds	O. T. Hudson, Mounds.
Randolph	W. A. James, Chester	O. C. Church, Steeleville.
Richland	H. D. Fahrenbacher, Olney	F. L. Barthelme, Olney.
Rock Island	Perry H. Wessel, Moline	F. E. Bolleart, East Moline.
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Sangamon	A. E. Walters, Springfield	H. P. Macnamara, Springfield.
Schuyler	C. M. Fleming, Rushville	H. D. Munson, Rushville.
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Shelby	A. B. Storm, Windsor	C. H. Hulick, Shelbyville.
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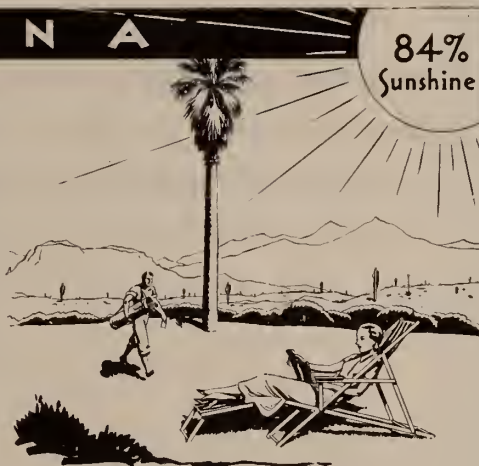
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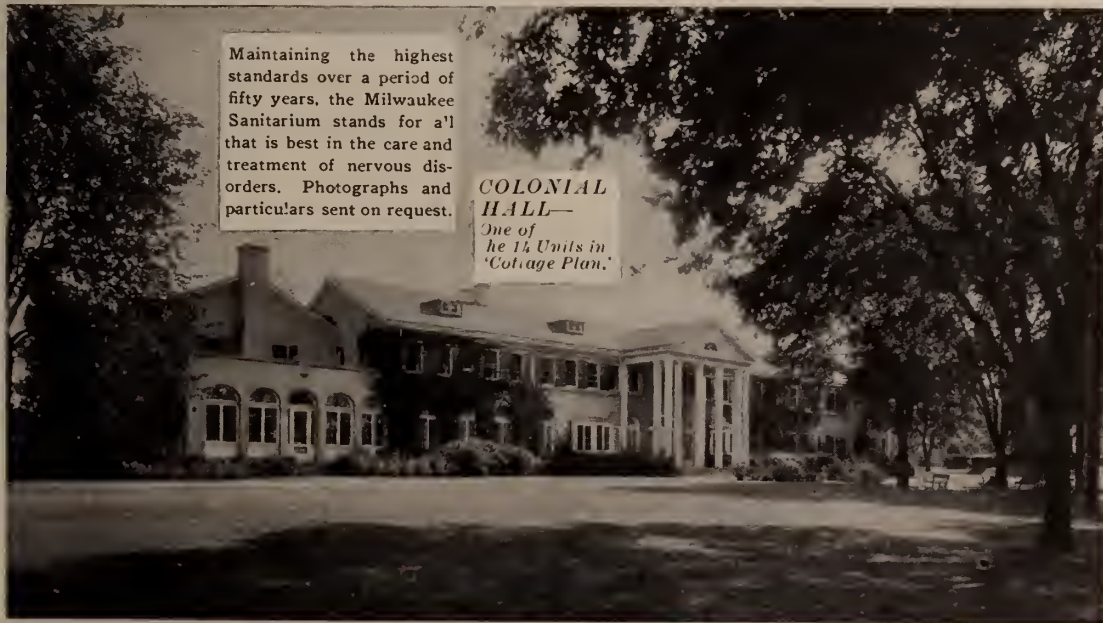
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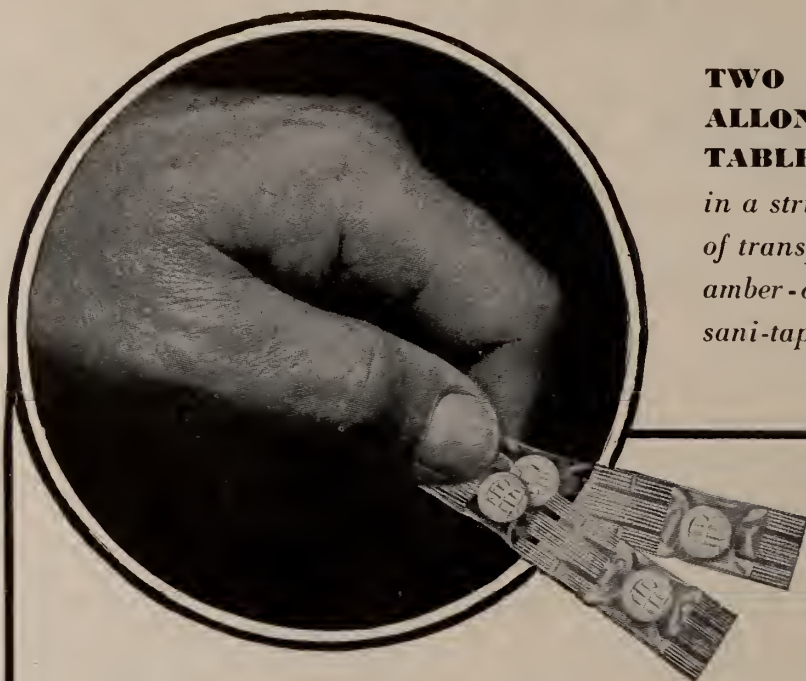
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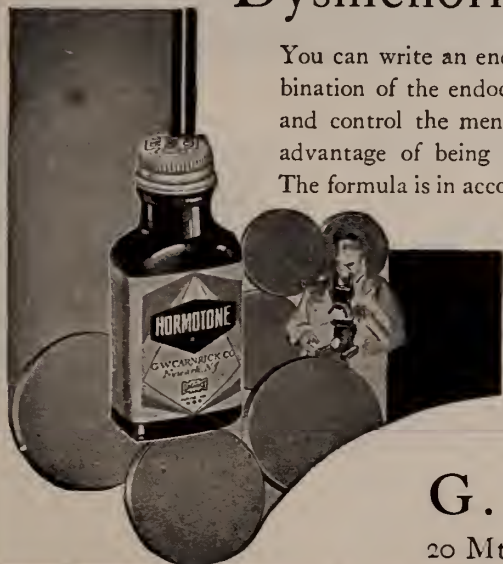
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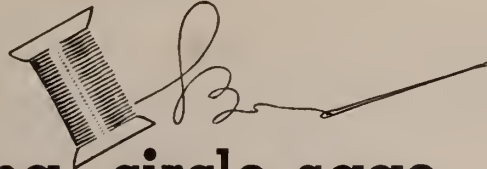
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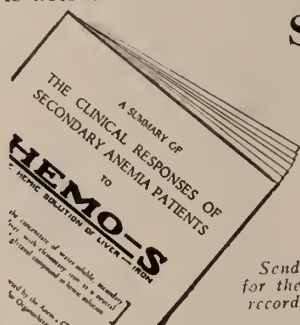
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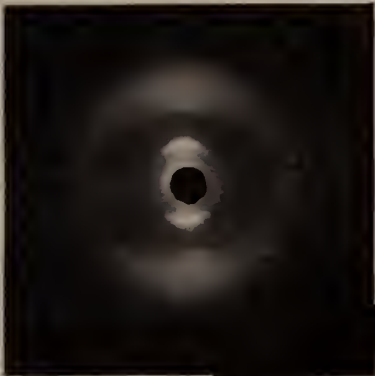
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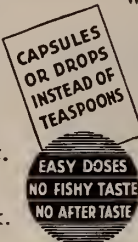
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* A. F. Hurst, British Medical Journal, July 15, 1933, pages 89-94.

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Editorials

CANCER CONTINUES AS A PERPLEXING PROBLEM, BUT HAS CEASED TO BE AN ALTOGETHER BAFFLING PUZZLE

CANCER THE CURSE CAN BE LIFTED

Cancer continues as a perplexing problem but has ceased to be an altogether baffling puzzle.

Early diagnosis and immediate and drastic treatment appear to point the way out. This in the face of statistics that show cancer to have increased during the past ten years at a rate twice as fast as the sister scourge, tuberculosis, has declined. Three decades ago the tuberculosis situation was much as the cancer situation is today, with the scales in favor of the current cancer situation.

Consensus of opinion today is that cancer is curable if: 1. Discovered in time; 2. Diagnosed accurately; 3. Treated immediately and faithfully.

This too in the face of the fact that mortality from cancer has both increased rapidly during recent years and is still on the increase and as yet presents no definite isolation of germ, source or contributory cause. Cancer, like the mind, comes at its own behest so far as accurate mortal knowledge extends. Yet cancer statistics are nothing if not illuminating with the lamp of hope shedding the light on the future. Delayed treatment seems to be the greatest obstacle. What figures are available on the cancer situation are crowded with interest.

For example: With respect to curability there is little room for doubt provided appropriate treatment is undertaken early enough in the course of the disease. Definite and detailed records, show 8,840 people cured of cancer, many of whom are still alive and well. Last year, at the annual clinical congress of the American College of Surgeons in Boston, eminent surgeons from all parts of the United States gave detailed reports on 4,348 cases of cancer which have been

cured. Each case has remained well and healthy for five years or more after the treatment. Diagnosis of cancer in each case was verified by all available methods and by the opinion of specialists.

Further, on file with the secretary of the American College of Surgeons, are records of another 1,263 people who have been cured of cancer and who were alive and healthy five years or more after treatment. Each case was authentic cancer, verified by the opinion of specialists and by laboratory examination.

A third group of 3,089 people recovered completely of cancer is made up of records collected from various medical journals and books. Each was undoubtedly cancer. Each person remained well and healthy for five years or more after treatment for cancer. A fourth group of 140 cases reported by individual physicians who handled the patients and who supplied satisfactory proof that cancer was the trouble in each case states that the persons recovered and remained well and healthy for at least five years after treatment. Aggregate of these four groups brings together records of 8,840 people who undoubtedly had cancer and who recovered completely after appropriate treatment. Surgery, radium and x-ray were the methods used in the treatment of these patients. These are the only methods known to be effective in the cure of cancer.

Mortality from cancer is on the increase. In Illinois, for example, the death rate has gone up from 82 per 100,000 population in 1918 to 114 in 1932. From about 5,000 per year a decade ago, the number of deaths from cancer has climbed to about 9,000 now in Illinois. Increase is more rapid among men than women. While nearly all cancer mortality is among people over 40 years old, the death rate has increased much more rapidly than the proportion of people in the cancer age, and much more rapidly than the improvement in diagnostic methods.

The conclusion is, that cancer death rate has increased because appropriate treatment has not been resorted to early enough. Why cancer prevalence is on the increase nobody knows.

Cancer is not confined to humans. All forms of life, both animal and vegetable, are subject to cancer. There is no evidence that cancer

is on the increase among lower forms of animal life. Indeed the contrary is true. Autopsies performed on more than 5,000 birds and mammals that have died in the Philadelphia zoological gardens, show that cancer is the cause of death in 2 out of each 100. Also that no significant increase in the prevalence of cancer has taken place among birds or mammals during the last decade.

Among humans, on the other hand, about 12 out of each 100 people who die are the victims of cancer.

Dublin has shown that mortality from cancer is much greater among wage earners than among business and professional groups. For wage earners the death rate from cancer is 25 per cent higher than it is among professional and business people, the white collar class. Dublin's statistics show that cancer of the mouth is twice as frequent among wage earners as among business and professional groups.

In this connection it is noted that other studies show uncorrected dental defects are much more frequent among wage earners than among those with greater incomes and no less than 9 per cent. of recruits for the navy were rejected because of dental defects. Appropriate treatment of cancerous conditions in places like the mouth where detection is facile early in the progress of the disease, will result in complete recovery in the great majority of cases. Dental defects and other causes or irritation set up cancerous conditions which do not receive prompt attention and therefore lead ultimately to a fatal outcome.

Illinois alone has some 27,000 cases of cancer with a majority age content of over forty. Of this number about 20,000 cases are in the early stages and about one-half of the women and about one-third of the men in this group of 27,000 have the disease in accessible parts of the body, mouth, breast, skin, rectum, cervix. The early symptoms can therefore be detected.

Now the average person with cancer waits for five and one-half months after he notices the first symptoms before he consults a physician about the trouble. Usually another delay between the date of first consulting a physician and the beginning of appropriate treatment, results only too often in the fatal progress of can-

cer. At the turn of the century it was known to the medical profession that tuberculosis is caused by the tubercle bacilli but how to use that knowledge for the benefit of patients was debatable.

The public believed then that tuberculosis was hereditary and uniformly fatal. The death rate was appalling, much higher than that from cancer today, at least in Illinois.

Today diagnosis is established in tuberculous patients at dates earlier in the course of the disease than was *dreamed* possible thirty years ago. Courageous physicians took the knowledge at hand thirty years ago and attacked the problem of tuberculosis with eloquently justified results. Prevalence of the disease is reduced to a point far beyond the hope and the belief of even the most ardent a quarter of a century ago. Attitude of the public in respect to this disease has been entirely changed.

What has been done with tuberculosis can be done with cancer. At least in so far as early treatment following diagnosis is concerned. Vigilance must be unremitting.

Not is it amiss to cite the celebrated "cancer comparison" of two ex-presidents of the United States—Gen. Grant and Grover Cleveland. Grant recognized trouble in his throat. His physician suspected cancer and advised action on that basis. For one reason or another about four months elapsed between the date when his physician advised consultation with a specialist and the time when an operation was done. Within eight months Grant was dead.

Cleveland recognized an abnormal condition in his mouth that failed to clear up within a reasonable time. His physician suspected cancer. The diagnosis was confirmed. The President acted at once upon the advice of specialists. Complete recovery and a healthy life of fifteen years followed the operation. The operation made necessary an artificial jaw but it added to Cleveland's life a period equal to one-fourth of the average life span.

THE PRESENT DAY TENDENCY OF PASSING THE QUESTION OF DIAGNOSIS UP TO THE LABORATORIES

Modern trend of disclaiming responsibility finds annoying demonstration in the tendency of

passing the question of diagnosis up to the laboratories and to a retinue of specialists where only too often the same results could be obtained from a good clinical diagnosis effected by the skilled general practitioner.

For a great many years general practitioners pursued that course. The mortality statistics were no higher, excluding sanitary control and immunization, then than they are now, or at any rate not markedly so, if at all, in comparison with the red tape and the general expense to which the patient is put. Because our young men are not taught to make clinical diagnosis, as a consequence the patient must pay for laboratory work without end. The same condition appertains to the matter of treatment. Special treatments are in the same status with all these laboratories where expense to the patient is concerned and without any appreciable advantage save in semi-rare instances. Instead of considering the body as a whole, the patient is told he must have a specialist for every section of his anatomy and for cross sections of that. All in all a wholly absurd procedure for the average ills of mankind.

When the general practitioner made his fairly good diagnosis he was wont to obtain like results in the majority of instances. Today we are taught and told that no one man can make even a *working* diagnosis and that our patient *must* receive attention of numerous specialists. Doctors of years gone by seemed able to meet all the therapeutics that might arise. Experience and observation says this was done with success. Turning the patient over to this or that specialist for any one part of the patient's anatomy involved, for special treatment, has added to the charges to the patient and has not really pleased him. Neither has it in the long run decreased our mortality tables. People are still dying in about the same ratio to population as has been the case for the past forty or fifty years. There are exceptions in connection with specific diseases for which have developed specific treatment. In diphtheria has come a decrease in deaths due to the use of antitoxin. Several other diseases offer similar experiences. These exceptions have been offset in the case of other conditions in which are decided increases in the number of deaths. Without showing much final im-

provement, all this additional work has forced up medical charges to the extent that dissatisfaction is appearing in the minds of the public. There is today too much "fussing" in practically all instances and that is too expensive to the patient.

SIGN AND RETURN THE A. M. A. DIRECTORY CARD

The thirteenth edition of the A. M. A. Medical Directory is scheduled to appear about July, 1934. The last edition was issued in 1931. Recently each physician in Illinois was furnished with a card upon which to record data pertaining to his professional status. There is a crying need for a new up-to-date directory; it is essential that data included in the directory be correct.

We are informed that many physicians received the cards sent by the A. M. A. but have not filled out and returned them. We urge every ethical physician in Illinois to promptly fill out and return the data card to the American Medical Association, 535 North Dearborn Street, Chicago, Illinois.

If any medical reader failed to receive such card, he should write to the American Medical Association, 535 North Dearborn Street, Chicago, Illinois, calling attention to the fact.

There was never a time when it was more important for every active physician to be a member of his County and State medical organizations and a Fellow of the American Medical Association.

STRESS FOR NEED OF FREQUENT MEDICAL EXAMINATION

Indubitably more stress should be placed upon vital need for more frequent physical examination.

Findings of accident actuaries employed by the large casualty companies indicate that there is an alarming increase in accidents occurring in the home and that also during 1932 the rate from fatal accidents *in the home* was the highest on record. Further during the years running between 1924 and 1932 the rate from fatal accidents in the home among persons at ages fifteen or over increased something well over 41 per cent. There was no such increase but rather a defi-

nite decrease in the home casualty rate as applied to children. Whether the acceleration of this hazard lies in the fact that the economic situation and loss of employment everywhere has kept more adults in the home or whether it is a reflection of an adult physical condition is to be considered. Since the increased hazard appears to be due entirely to accidents involving falls, and to falls among adults the finger would seem to point to some contributory physical defect or diversion incidental to maturity. In the year 1924, for example, when this increase began to be shown one-third of all fatal accidents occurring to adults while engaged in activities in and about the home were due to falls while in 1932 this single class accounted to *fifty* per cent. of all domestic accidents. Now with respect to accidental burns, the death rate has remained on practically the same level throughout the nine-year period, while asphyxiations by gas are fewer than ever before. In the miscellaneous class of casualties the group rate varies but triflingly either above or below the accepted average. In this class "miscellaneous" are considered casualties other than falls, burns and asphyxia by gas.

Any number of serious illnesses may evidence their presence by that loss of equilibrium and muscular co-ordination that leads to a fall. Especially a fall in such familiar terrain as the home even allowing a certain discount for natural human carelessness. The way to exercise prevention is by investigation—before and not after the accident.

In this instance the barn door is best locked by frequent and thorough physical examination

FATAL ACCIDENTS IN THE HOME

KIND OF ACCIDENT; AGE	DEATHRATE FROM HOME ACCIDENTS PER 100,000 PERSONS								
	1932	1931	1930	1929	1928	1927	1926	1925	1924
ALL HOME ACCIDENTS	11.1	11.2	11.2	13.5	13.3	14.2	16.3	16.5	14.4
Under 15 years...	15.6	15.2	14.4	12.7	11.7	12.3	13.0	12.6	11.0
15 years and over..									
Burns (conflagration excepted)									
Under 15 years...	4.6	4.5	5.3	6.1	6.0	6.4	7.4	7.4	6.3
15 years and over..	2.1	2.0	2.1	2.2	2.1	2.0	2.2	2.3	2.2
Traumatism by fall									
Under 15 years...	1.8	1.8	1.4	1.7	1.5	1.9	2.0	2.0	1.8
15 years and over..	8.8	8.1	6.9	5.6	5.0	4.9	4.6	4.4	3.8
Absorption of poison- ous gas									
Under 15 years...	.3	.3	.2	.5	.3	.2	.6	.4	.5
15 years and over..	1.8	2.2	2.4	2.6	2.8	2.8	3.7	2.7	3.0
All other accidents									
Under 15 years...	4.4	4.6	4.3	5.2	5.5	5.7	6.3	6.7	5.8
15 years and over..	2.9	2.9	3.0	2.3	1.8	2.6	2.5	3.2	2.0

of adults. The conscientious family physician will insist upon this.

The appended table has been issued by the Metropolitan Life Insurance Company:

DOCTORS DESIRING TO PRESENT PAPERS AT 1934 ANNUAL MEETING

Members of the Illinois State Medical Society desiring to present papers at the 1934 Annual Meeting to be held in Springfield, May 15, 16, 17, 1934, should get in touch with the proper section officers as soon as possible.

Owing to the large membership of the Society, it is desirable to place members on the program each year who have not appeared in recent years.

The number of speakers at the annual meeting for each section is limited; consequently it is desired that all papers should be of interest to the members in general. Any member desiring to make a presentation at the annual meeting in any of the five scientific sections should write the Section Officers, giving the title of the paper, and an abstract of the same. If interesting case reports are desired to be given, tell briefly about the case of unusual interest, in making application for the place on the program.

It is the desire of all officers of the Sections to make the 1934 Annual Meeting program an outstanding one, and arrange it to the best advantage of all members. On Thursday morning, the last day of the meeting, it is planned to have a joint session of all five scientific sections, and present papers which will be of interest to all members regardless of their own special inclinations in practice.

Members desiring to make a presentation of either a paper or interesting case report, should get in touch with the proper Section Officers at an early date. The officers of each Section are herewith given.

Section on Medicine

R. F. Herndon, Chairman, Springfield.

Don C. Sutton, Secretary, 30 North Michigan Blvd., Chicago.

Section on Surgery

George W. Post, Chairman, 4010 West Madison Street, Chicago.

B. V. McClanahan, Secretary, Galesburg.

Section on Eye, Ear, Nose and Throat

George S. Duntley, Chairman, Macomb.

O. B. Nugent, Secretary, 231 West Washington Street, Chicago.

Section on Public Health and Hygiene

J. Howard Beard, Chairman, Urbana.

Lloyd Arnold, Secretary, 1817 West Polk Street, Chicago.

Section on Radiology

Robert F. Arens, Chairman, 2839 Ellis Avenue, Chicago.

F. Flynn, Secretary, Decatur.

LECTURES ON CATARACT EXTRACTION

Professor A. Elschmig of Prague will give a course on intracapsular extraction of cataract on Tuesday, February 27, 1934, in Chicago.

The number of registrants will be limited and there will be a registration fee of \$10.00. There will be a lecture early in the afternoon, illustrated with slides and movies, which will be followed by operations on patients before groups of not more than 10 registrants. Monday evening, February 26, 1934, Professor Elschmig will speak on "Myopia Extraction" before the Chicago Ophthalmologic Society.

Send checks or communicate with Dr. Theodore M. Shapira, 58 East Washington Street, Chicago, State 5893.

HAMMER TOE WITH ANKYLOSIS

In cases of hammer toe with ankylosis it is desirable to lay the joint open and excise the ends of the bones at the joint—the base of the medial phalanx and the head of the proximal phalanx. No attention is paid to the periosteum. A simple resection clear across the two bones is made, the cut ends are placed in apposition and allowed to grow together. This results in a stiff joint it is true, but the toe is straight and the fact that it is stiff causes no inconvenience whatever.—Dr. E. W. Cordingley, of Clinton, Ind., in *Med. Herald*, May, 1932.

HEMOPHILIA TREATED BY VENESECTION

A case of long-standing hemophilia was relieved by bloodletting. Withdrawals of 500, 250 and 300 cc. of blood were made in hospital and, after discharge, of 500 to 600 cc. every five or six weeks. Headaches, vertigo, joint pains and subcutaneous hemorrhages ceased.—Dr. G. B. Lawson and associates, of Roanoke, Va., in *J. A. M. A.*, Apr. 23, 1932.

In the same Journal and issue, Drs. A. G. Foord and B. R. Dysart, of Pasadena, Cal., report a case of clinical hemophilia, actively bleeding following tonsillectomy, treated by one injection of ovarian extract, with prompt arrest of the bleeding.

Correspondence

HOME CARE

Attracted by a sign "Medical Center," I stepped into a suite occupied by two general practitioners, one holding office hours in the morning and the other in the afternoon, and a dentist who was there all day. All three worked together in the evening. This little group serving an industrial neighborhood are caring for all minor and even moderately severe cases at the office or at the patient's home. And they are doing good work.

Following a period when specialism was rampant, elaborate laboratory equipment considered essential, and hospital residence required, seemingly for every ailment, it is refreshing to find rapidly increasing emphasis placed on the value of office and home care and the quality of service that may be thus rendered to the sick person by the doctor practicing general medicine. Why should hospital expense be added to the cost of caring for a thrombotic hemorrhoid, a sebaceous cyst or a chalazion. From many sources comes the information that from 80 to 85 per cent. of all ailments can be treated at home or in the doctor's office with no more equipment than a physician usually has or may have in his office or in his hand bag.

These statements are in no way derogatory to the quality of hospital service when it is rightly needed, nor to the contributions of scientific progress made by these institutions through their special staffs. They add force to the doctor's efforts to secure comfort and cure for patients in the least time and with no unnecessary expense. They emphasize the views of those doctors who believe that the development of medical science is not for its own inherent pleasure but for the good of the people and that no sick human being may ever be regarded as an "interesting specimen."

Home nursing and social service organizations have revealed how much can be done for patients outside of institutions, and with much saving to the family and also to the community. The financial costs are not the only problem; there is the recognition of the value of personal solicitude and love in the home treatment and care of the sick. Since the personal relationship of the doctor and his patient is so valuable, much may be contributed to a patient's speedy recovery

by faithful service of those vitally interested in his cure. Nor may one forget the salutary influences that react on a household and family where sickness is present and lovingly attended.

PUBLIC POLICY COMMITTEE,
Illinois State Medical Society.

BLANKS FOR SCIENTIFIC EXHIBIT AT A. M. A. 1934 CONVENTION

Application blanks are now available for space in the Scientific Exhibit at the Cleveland Session of the American Medical Association, June 11 to 15, 1934. The Committee on Scientific Exhibit requires that all applicants fill out the regular application form and requests that this be done as early as convenient.

The final date for filing applications is February 26, 1934. Any persons desiring to receive an application blank should address a request to the Director, Scientific Exhibit, American Medical Association, 535 North Dearborn Street, Chicago, Illinois.

Medical Economics

MEDICAL CARE OF THE INDIGENT

The problem of the care of the indigent has been one confronting the medical profession from time immemorial, and during the past three years, has been a bigger problem than ever before.

Physicians unconsciously classify their patient in three classes:

- 1st. Those who pay their bills in full.
- 2nd. Those who pay part of their bill, through inability to pay all of it.
- 3rd. Those who pay nothing at all for their medical care.

In the third class, we find those people who are temporarily out of employment, and are absolutely unable to pay for their medical care at this time, although when working do the best that they can. Again we have in this class those people who would not pay anything that can be avoided, and these are the ones who have long been considered as "dead-beats."

We all realize that in the giving of medical care, there is always a double obligation, that is, one on the part of the physician, who agrees to give good, conscientious and adequate service to his patients, and on the part of the pa-

tient to pay for these services to the best of his ability.

In Illinois the obligation of caring for their poor rests on the shoulders of the Township government, so long as they are able to pay the bills. For years, it has been the practice of many township supervisors to ask physicians to submit contracts for the care of the poor, medically, and it is almost invariably the practice to give the contract to the lowest bidder with little if any consideration to the ability of the individual to give adequate medical service.

No one can anticipate the medical needs of a community at any time, and with the large number of unemployed, and with many existing deficiencies in diet among these people, it is quite obvious that many more deficiency diseases will be found than other normal conditions, which means a greater susceptibility to disease, especially among children. The Government has recently placed medical care on the list of necessities, along with food, clothing and shelter, which must be provided for unemployed indigents.

The supervisor who believes that medical care should be provided on a contract basis, does not ask the grocer, coal dealer, and clothier to submit a contract guaranteeing the provision of these necessities to the unemployed, but they are paid for on an individual basis in every instance. A recent survey made throughout Illinois in an effort to get reliable data concerning the giving of medical care to the indigent, shows that in many counties all physicians refuse to submit a bid for a contract to care for the indigent, and in these counties subsequently, all physicians are permitted to give the necessary care upon authorization by the supervisors, and each of them receives some remuneration.

Some counties report that 100 per cent of the regular rate is allowed, while in others, a reduction is made from normal rates for service.

In checking over these reports, it is evident that physicians in all communities where no contracts exist, are receiving a better percentage of remuneration for indigent care, than where contracts are in force.

Although at this time, the reports received are not sufficient to give complete information on this phase of medical care, the Committee on Medical Economics is receiving data which

will be of much value to our economics contribution within a short time. We again urge all county society secretaries to give the desired information as soon as possible, for the benefit of all physicians in Illinois.

As previously reported, during the month of September, the Federal Relief Administration released Rules and Regulations No. Seven, governing the giving of medical care to recipients of unemployed indigents, and in this, each State Medical Society was asked to submit their program to the State Emergency Relief Commission, for their approval. After approval is given to a State Society Program, it should then be approved by all County Medical Societies, and then be submitted by them to local relief agencies.

The State Society was asked to select a committee to confer with State Relief Officials on matters of medical policy, and the County Societies similarly were asked to name a committee to confer with local relief officials. The Program of the Illinois State Medical Society has been submitted to the proper officials, and full reports have been sent to all component societies. Owing to other pressing duties, the Relief Commission has not yet given their approval to this program, but we have been given every assurance that it will be attended to within a short time.

It is generally believed that when this program is approved and placed in operation, it will enable physicians in every county in Illinois to receive better remuneration for medical care of the indigents, and will aid county societies and their committees to confer with the proper officials in their community, so that unfair contracts for furnishing indigent care will be abolished.

The Committee on Medical Economics of the Illinois State Medical Society is interested in the problems of the Medical Profession, and is always anxious to do everything possible to aid in the betterment of conditions pertaining to medical practice. This committee will appreciate any suggestions from any county medical society or individual members at any time. We again want to urge the Secretaries to send to the Secretary of the Illinois State Medical Society all possible data concerning the medical care of the indigent, the plan in operation in your re-

spective communities for giving this care, and information relative to contracts given to individual physicians, all of which is important in our present medical economics survey of the entire state.

E. S. HAMILTON, Chairman,
Kankakee, Illinois.

COURSES IN OPHTHALMOLOGY

An unusually comprehensive didactic course of instruction in Ophthalmology is to be offered during the year 1934 starting January 1 to internes and residents in Ophthalmology in the various hospitals in Chicago. It is an outgrowth of and amplification of the course previously known as the city-wide course.

Two hundred hours of didactic instruction will be given by fifty-three instructors from the various universities and hospitals. These lectures will be divided evenly between the fundamental and the clinical branches, but they will in no wise be a substitute for actual clinical work.

The schedule is as follows:

Anatomy-Gross, Microscopic, Embryology, Central Visual Pathways	16 hrs.
Physiology	12 hrs.
Physiological Optics	12 hrs.
Perimetry	6 hrs.
Refraction, including spectacle fitting.....	12 hrs.
Muscles	10 hrs.
Pathology	14 hrs.
Bacteriology	2 hrs.
Pharmacology	2 hrs.
Principles of the Slit Lamp.....	4 hrs.
Instruments of Precision.....	2 hrs.
Methods of Clinical Examination.....	4 hrs.
Keeping of Records.....	2 hrs.
Use of the Library.....	2 hrs.
Diseases of the Eye.....	48 hrs.
Relation to Other Branches of Medicine.....	20 hrs.
Therapeutics—Medical	8 hrs.
Surgical	16 hrs.
Industrial Ophthalmology	2 hrs.
Prevention of Blindness.....	2 hrs.
Ophthalmological Ethics	2 hrs.
Fitting of Prostheses.....	2 hrs.
	200 hrs.

All ophthalmological internes and residents and bona fide assistants in ophthalmological clinics are invited to attend. Owing to limited space no others can be accommodated.

Practically all of the lectures will be given at the Illinois Eye and Ear Infirmary. A noteworthy departure and special feature will be the availability to the students *before the lecture* of the notes on that lecture. This will allow the student to give his undivided attention to the lecturer.

RESOLUTIONS ON THE DEATH OF DOCTOR NELSON

WHEREAS: The inevitable Fate that resistlessly awaits all men at the nether end of life has taken recently from our midst a warm friend, an able colleague,

and a wise counselor in the person of Dr. Charles S. Nelson; and

WHEREAS: Throughout his long and useful professional life Dr. Nelson was tireless in his efforts to promote public faith and confidence in the ethical medical profession and as a life-long member of this Society was ever alert in the interests of the practicing physicians as represented by the Illinois State Medical Society and all of its component parts; and

WHEREAS: Dr. Nelson exemplified through his thirty odd years of service on the professional staff of the State Department of Public Health those qualities of efficiency, integrity, honesty competency and diplomacy that go to make up a physician of parts and cause to be reposed in him the respect of his fellow practitioners and the confidence of the public; now therefore, be it

RESOLVED: That the Sangamon County Medical Society expresses, herewith, its appreciation of the value and worth of the life of Dr. Nelson both as a friend and as a doctor and be it further

RESOLVED: That these resolutions be spread upon the minutes of the Sangamon County Medical Society and that a copy thereof be forwarded to the Illinois State Medical Society with a request that they be published in the ILLINOIS MEDICAL JOURNAL.

Homer MacNamara, Secretary,
Sangamon County Medical Society.

VACCINE PREVENTION OF WHOOPING COUGH*

In 1928 I began a study on immunizing 294 selected young children against whooping cough. Their ages ranged from nine months to several years and their past medical histories were familiar to me from their infancy. The vaccine was especially prepared by my collaborator from five to seven strongly hemolytic strains of the Bordet-Gengou bacillus.

The children were treated in three groups and each child was given between 7 and 8 cc. of vaccine (70 to 80 billion bacilli). The 109 children in Group A were given about 1 cc. hypodermically in alternate arms each week, until eight injections were given. The 97 children in Group B were given 1 cc. simultaneously in each arm for four successive weeks. The 83 children in Group C were given 1, 1.5 and 1.5 cc., respectively, in each arm each week for three weeks. In neither group could the local or systemic reaction be compared in severity with the mildest smallpox vaccination reaction. White blood counts made in Groups A and B on the first and last injection days showed some increase (chiefly in small lymphocytes) in over 85 per cent of cases. The vaccine seems to influence the blood picture in the same way as does whooping cough.

General questionnaire results showed that 82 of the Group A children, 29 of the Group B children and 16 of the Group C children, were intimately exposed to whooping cough, with only one developing a questionable cough. In eight cases carefully studied, in which there was continuous exposure, one child developed symptoms similar to whooping cough, but did not have

paroxysms. Her exposure began less than two months after her injections were completed. There should be at least three months' interval to consider it a fair test of immunity.

I feel that we now have a definite means of preventing this disease, if we use vaccine prepared from recently isolated, strongly hemolytic strains of the Bordet-Gengou bacillus, grown only on human blood and the like. We can not expect results from commercial pertussis vaccines.

Louis Sauer, M. D.

Evanston, Illinois.

**J. A. M. A.*, Jan. 28, 1933.

STATE HEALTH OFFICERS

A special program for health officers has been arranged by the State Department of Public Health to take place in Springfield on December 14 and 15. The features of the program are symposiums on epidemic encephalitis, diet and nutrition, and school health problems. A special banquet session on the evening of December 14 with Dr. W. A. Evans and Dr. Allan J. Hruby, Chicago, and Dr. Eben J. Carey, Milwaukee, as speakers, and a luncheon at noon on December 15 followed by a round table discussion of diphtheria control are expected to be of outstanding interest to health officers. Five local health officers including Dr. H. A. Orvis, Winnetka; Dr. W. M. Talbert, Decatur; Dr. John W. H. Pollard, Evanston; Dr. E. B. Coolley, Danville; and Dr. H. O. Collins, Quincy, have been asked to participate in the round-table program.

Other guest speakers who have agreed to appear on the program include Dr. Paul J. Zentay and Dr. John Eschenbrenner, St. Louis, who are to discuss epidemic encephalitis; Dr. Arlington Ailes, LaSalle, Dr. Lloyd Arnold, Dr. Julius Hess and Prof. Lydia Roberts, Chicago, who are to speak on diet and nutrition; Dr. J. Arthur Myers, Minneapolis, Dr. Robinson Bosworth, Rockford, Dr. Thurman B. Rice, Indianapolis, and Dr. G. Koehler, Springfield, who are to speak on school health problems. Dr. J. P. Leake of the U. S. Public Health Service has been invited to participate in the symposium on epidemic encephalitis. Several members of the professional staff of the State Department of Public Health are also on the program, of which Dr. Frank J. Jirka, State health director, is general chairman.

BRANCH STATE LABORATORY

Under the immediate supervision of Professor F. W. Tanner, a branch diagnostic laboratory has been opened by the State Department of Public Health at the University of Illinois in Urbana. Specimens and communications meant for this branch laboratory should be addressed to the State Diagnostic Laboratory, Room 360, Chemistry Building, Urbana.

This newly established branch is prepared to do all diagnostic tests ordinarily performed in public health laboratories. These include the examination of blood specimens for typhoid fever, undulant fever, tularemia, syphilis and malaria; sputum for tuberculosis and pus

for gonorrhea and Vincent's angina; spinal fluid for syphilis; cultures for diphtheria; animal heads for rabies; excreta for typhoid.

The Urbana branch was established in response to a demand from a large body of physicians in the central eastern part of the State. Using the laboratory at Urbana will enable many physicians to get reports of results in about one-half the time necessary when specimens are sent to Springfield from the eastern portion.

Full duty diagnostic laboratories of the State Department, in addition to the Urbana branch, are located in the Capitol Building, Springfield; Southern Illinois State Normal University, Carbondale; 1849 West Polk Street, Chicago.

RESEARCH ON GOITER

The American Association for the Study of Goiter, for the fifth time, offers Three Hundred Dollars (\$300.00) as a first award, and two honorable mentions for the best essays based upon original research work on any phase of goiter presented at their annual meeting in Cleveland, Ohio, June 7, 8 and 9, 1934. It is hoped this will stimulate valuable research work, especially in regard to the basis cause of goiter.

Competing manuscripts must be in English, and submitted to the Corresponding Secretary, J. R. Yung, M. D., 670 Cherry St., Terre Haute, Ind., U. S. A., not later than April 1, 1934. Manuscripts received after this date will be held for the next year or returned at the author's request.

The First Award of the Memphis Tenn., 1933 meeting was given Anne B. Heyman, A. B., M. S., University of Michigan, Ann Arbor, Mich., "The Bacteriology of Goiter and the Production of Thyroid Hyperplasia in Rabbits on a Special Diet."

Honorable mentions were awarded J. Lerman, M. D., and W. T. Salter, M. D., Huntington Memorial Hospital, Boston, Mass., "The Calorigenic Action of Thyroid and Some of Its Active Constituents," Prof. Dr. Stefan Konsuloff, Sofia, Bulgaria, "Experimental Studies on Etiology of Goiter."

WOMAN'S AUXILIARY TO THE ILLINOIS STATE MEDICAL SOCIETY

State Board Meeting. On November 18 the Board of Directors of the Woman's Auxiliary to the Illinois State Medical Society, convened in the Stevens Hotel, with twenty-six members present. Mrs. H. I. Conn, First Vice-President, occupied the chair, the President, Mrs. Solomon Jones, being absent on account of illness. A message of regret and best wishes was wired her.

Much interest was manifested in the encouraging reports of Chairmen of Standing Committees and Councilors. The Organization Chairman, Mrs. Philip Kreuscher, reported an increased interest among county medical societies in the work of the Auxiliary and in the extension of same. Mrs. Kreuscher attended and represented the President, Mrs. Jones, at a District Convention in Centralia, November 3 and 4.

The Public Relations Chairman, Mrs. W. R. Cubbins, has contacted a variety of organizations in a

united effort to improve health conditions. The lecture by Dr. Charles F. Read in the Illinois Host House and luncheon in the Trustees' Lounge at the Century of Progress in this behalf, on October 11, were propitious events.

Mrs. H. H. Hurd, Hygeia Chairman, reported satisfactory progress in securing subscriptions and is pressing her work in every organized county.

Mrs. W. R. Rhodes, Chairman of Finance, submitted a budget outline for the year, which was accepted. The financial outlook for the organization is quite satisfactory.

The Press and Publicity Chairman, Mrs. J. P. Simonds, reports heartiest cooperation from Auxiliary workers in supplying material, and from Doctor Whalen in giving our activities publicity in the ILLINOIS MEDICAL JOURNAL.

Councilors Mrs. H. B. Henkel and Mrs. I. L. Foulon, of the Fifth and Tenth Districts, reported profitable and enthusiastic meetings with the President, Mrs. Jones attending and making an inspiring address.

Mrs. A. B. Middleton, of the Second District, has Auxiliaries in progress of organization in both LaSalle and Bureau Counties, and Mrs. E. W. Burroughs was optimistic about results of her efforts in Saline County in the near future.

A beautifully appointed luncheon was served the board members in the Boulevard Room of the Stevens Hotel, at 12:30 o'clock.

That physicians and physicians' wives are awakening to the advantage to the profession of the Auxiliaries, there can be little doubt, as all counties where these organizations exist are enthusiastic in their praise.

Respectfully submitted,

(Mrs. E. B.) Nelle F. Coolley,
Corresponding Secretary.

PROGRAM BUILDING FOR A WOMAN'S AUXILIARY

MRS. E. P. SLOAN, *Program Chairman*

A simple yet adequate guide to Auxiliary program building is to be found in our constitution which defines the organization's three-fold object as:

- (a) To assist the medical profession in advancing disease prevention;
- (b) To essay legislation thereto;
- (c) To respond to all calls from our Medical organizations in behalf of their professional interests.

Every program given by a Woman's Auxiliary to the Illinois State Medical Society should be judged by these principles. Of any suggested line of work we should ask, "does it do any or all of the above listed things;" if the answer is "yes," then the program matter is eligible.

This pattern should be stressed because of the very real importance of the work that may be done by the Woman's Auxiliary to the Medical Association. It is wise for us to keep well within the definitely prescribed boundaries of the organization's designated task—a huge one of limitless possibilities in its own right, if

seriously and scientifically attacked. It is primarily a work of education—the slow, thorough, evolutionary task of bringing to the laity a better understanding of the magnificent work of medical science.

Of utmost importance in facilitating this educational program is the need that we, the wives of Doctors, first make ourselves as intelligent as possible regarding medical matters. Research in medical literature should be the pleasurable obligation of each of us; the past history of medicine is exciting, stirring drama; its present is a colossal humanitarian order, of unsurpassable importance; its future a potential blessing to civilization that challenges our most loyal efforts in defense of its free development.

High sounding words? Perhaps. Yet literally true—and unless the wives of doctors blend this vision of the inestimable value of the medical profession with the basic factual information of health programs, we miss a great factor in any educational campaign—the driving force that springs from an adequate understanding of and a sincere belief in the work itself.

Our program should be designed to educate us in order that we may effectively educate others. For that is our chief aim—to act as the informative link between our men and the public they serve. It is a delicate work requiring an extraordinarily well informed intelligence combined with a patient tactfulness.

Despite the wide range of condition under which we live, every Doctor's wife, whether located in city or country, feels the need of counsel, of encouragement, of information regarding the best methods of making herself an effective auxiliary member. Locality must influence and alter programs. Metropolitan conditions create certain emergencies, while in rural communities other types of problems are indigenous. Naturally, each unit takes its own peculiar needs into consideration and must adjust and compromise any suggested program to meet them. However, the following listed sources suggest the fundamental ingredients upon which any county unit may work:

1. The Envelope Study Programs for county auxiliaries prepared by the National Program Committee.
2. Study of history and organization of,
 - (a) State Welfare Work.
 - (b) State Department of Health.
3. Use of the services of the educational committee of the Illinois State Medical Society through:
 - (a) Public meetings, with health talks given by the educational committee's approved speakers.
 - (b) Presentation to laity groups of educational films.
4. Miscellaneous.
 - (a) Review of biographies of the great men of medicine.

This is a beautifully exciting way to learn the romantic history of the daring science of medicine.

- (b) Constant use of Hygeia, THE ILLINOIS

MEDICAL JOURNAL, and the A.M.A. Bulletin.

- (c) Participation in all approved local activities that promote better health conditions, such as Child Health Day in May; a Health Audit Survey.

In short, to be always an *auxiliary* in the literal sense of the word.

Within this skeleton framework is ample material to satisfy the varied needs and interests of any auxiliary. Not until we have exhausted its possibilities should any doctor's wife complain of a dearth of program subject matter. A studious use of these facilities, gratis to us, will go far toward promoting our growth into a real auxiliary—a helpful adjunct to the profession of which we are a proud part.

NEWS ITEMS FROM ILLINOIS AUXILIARIES

Chicago Auxiliary. Mrs. N. M. Percy, Program Chairman, reports that the Woman's Auxiliary of the Chicago Medical Society had a very successful "Laity Day" luncheon and program on Wednesday, November 1, at the Medical and Dental Arts Club. Eighty-five women were present to hear Dr. W. A. Evans, Health Editor of the *Chicago Tribune*, speak on "Health and the Depression." Presidents or representatives of Cook County Women's Clubs were guests of the Auxiliary. An announcement was made offering the services of the Speakers' Bureau of the Educational Committee of the Illinois State Medical Society. The December 6 meeting will be a Card Party and Tea at the Congress Hotel. Part of the funds raised may be used in placing "Hygeia" in schools, reading-rooms, libraries, etc., where subscriptions have been stopped for lack of funds.

Aux Plaines Branch. Mrs. H. M. Peterson, President, welcomed one hundred and seventy members and guests at the annual bridge luncheon at the Oak Park Country Club on September 22. The regular monthly meeting was held at the Oak Park Club on October 27. A Laity Day program was presented, Doctor John Favill, Neurologist and member of the National Committee of Mental Hygiene, was the speaker. On November 24 a social meeting was held at Marshall Field & Co., with luncheon in the Wedgewood Room. The speaker was Mrs. Charles W. Leigh, former art chairman, Illinois Federation of Women's Clubs.

Jackson Park Branch. Mrs. Meyer Solomon, the President, entertained members and friends on October 18 with luncheon in her home. Dr. Henry S. Houghton, formerly Director of Peking Union Medical College, spoke on "Medical Work in Peking, China." Miss Minsen Tang, student of Social Science Administration, related some of her personal experiences as a Chinese student in America. The annual card party to raise funds for the work of the branch was held on November 15 at the home of Mrs. John J. Gill.

Englewood Branch. Mrs. D. A. Vloedman, President, reports the regular monthly meeting which was held on November 22 at the Evangelical Hospital of Chi-

cago. Doctor R. K. Packard was the speaker. His subject was "Medical Economics."

North Shore Branch. The annual social meeting was held in April at the home of Mrs. F. O. Fredrickson, the President. Members and friends enjoyed an informal luncheon and sufficient funds were raised to meet the necessary expenses in carrying on the work of the branch. The first meeting of the autumn was held September 20 at the home of Mrs. E. W. Mueller, Past President of the State Auxiliary. Mrs. Fredrickson reports that the members of the North Shore Branch are enthusiastically working to increase their membership. This is, at present, their definite object. Mrs. Frank J. Taraba is membership chairman. Members are urged to attend and to invite their friends, who are wives of physicians, to attend all program meetings of the Central Auxiliary. At the November 1 meeting members of the North Shore branch met for a Round-Table discussion during luncheon hour.

North Side Branch. Mrs. Michael L. Mason, President, announces that the first meeting of the year was held October 9 at Henrotin Hospital, with Dr. M. L. Harris, former President of the American Medical Association, giving an address on "The History of Henrotin Hospital." Miss Miller, the Superintendent, showed plans for the new hospital, which will be constructed in 1934. Following a tour of the hospital, tea was served. The second meeting was held on November 13 at St. Vincent's Infant and Maternity Hospital. Sister Camilla was hostess. She presented a scenario, given by children under three years of age. After a tour of the hospital, Dr. M. L. Blatt gave a short talk on "The History of St. Vincent's." The tea hour completed this interesting program.

Douglas County. The March meeting was held at the home of Mrs. J. O. Cletcher, Tuscola. Mrs. W. C. Blaine presented a paper on immunization and showed graphs from the Illinois State Department of Public Health which indicated the incidence of smallpox in Illinois compared with other states having compulsory vaccination laws. She had interesting charts showing the incidence of communicable disease by age groups and the incidence of diphtheria in orphanages before and after the administration of toxin-antitoxin and toxoid. The April meeting was held at the home of Mrs. W. C. Blaine, Tuscola. Mrs. C. O. Norris of Arthur presented a paper on medical economics. Mrs. J. O. Cletcher entertained the members at the May meeting when Mrs. Philips presented a paper on social insurance and state medicine. The Auxiliary meets whenever Douglas County Medical Society meets. The September meeting was held at the Tuscola Chamber of Commerce. The annual pot-luck luncheon and bridge was held at the home of Dr. and Mrs. Conn in Newman. Mrs. Evans presented a paper at this meeting on "A Doctor's Wife Speaks Up," from the August *Harper's*.

Kane County. The Auxiliary met for dinner with the doctors at the Sherman Hospital, Elgin. Mrs. Solomon Jones was guest of honor and gave a splendid inspirational talk to the ladies after being introduced to

the County Medical Society. She reminded us that human happiness depends upon health, stressed the importance of the work to be done and the responsibility of representing the medical profession. She urged an informed and participating membership. It would be a splendid thing for all Auxiliaries to hear Mrs. Jones and for them to absorb some of the enthusiasm she radiates. The members decided to use a portion of the money on hand to place subscriptions for "Hygeia" in different places in the county. The Auxiliary previously had placed the magazine in the Y. W. C. A., a health center, a library, and a recreation center, where they were very much appreciated. This being the final meeting of the year, Mrs. Imas Rice, the President, gave a resume of the year's work, which included talks by Dr. Eva Wilson, resident physician of Oakdale, the reformatory for women at Dwight; Miss Audrey Campbell, associated with the Illinois Society for the Prevention of Blindness, and Mrs. John T. Mason, member of the Board of the Illinois Society for Prevention of Blindness and largely responsible for the home at Dwight. She talked on "Child Legislation." During the year an advisory committee was appointed by the county medical society; letters and telegrams were sent with their permission on the nitrate bill; a tour of inspection was made through the Copley Hospital at Aurora, and interspersed were two evenings of bridge and a tea. Mrs. Rice then turned the chair over to Mrs. R. C. Hetherington, Geneva, President-Elect, who graciously accepted the office and spoke hopefully of the work to be done. Miss Philis Whitman, clinical psychologist of the Elgin State Hospital, gave an interesting history of the treatment of mental cases from ancient to modern times.

Livingston County. Livingston County Medical Society celebrated its first birthday December 6. Four regular meetings and one special meeting were held during the year, with an average attendance of ten. There were thirty women eligible to membership and fourteen of these belong. The Auxiliary has had round table discussions or speakers at all meetings and has cooperated in sponsoring pre-school examinations in office of physicians. Members have kept posted on medical legislation in Illinois and have written senators or representatives when necessary. The Auxiliary hopes to promote health meetings in women's clubs and to place "Hygeia" in schools as rapidly as funds permit. Books were given to the Livingston County Tuberculosis Sanatorium. At present members are busy sponsoring a Community Food Shower for the benefit of St. James Hospital, which has dispensed an unusual amount of charity during the year. The Auxiliary believes this is an opportunity to interest the public in its work. Non-members are helping and growth in membership is expected, as the drive is county-wide. "We are a small and new organization badly handicapped by lack of funds, but we are striving to keep alive and every member is interested."

McLean County. Mrs. H. W. Grote, President, reports: "Last year we started with only five members. By meeting at the different homes, having supper and a

social evening, followed by book reviews and items read from the ILLINOIS MEDICAL JOURNAL, and by each member contributing twenty-five cents, our membership and bank account have been increased. We now have twenty-five members. We have done some philanthropic work and this year see prospects for a much larger membership." Meetings are held the second Tuesday in the month.

Marion County. The Auxiliary to the Marion County Medical Society entertained at a bridge luncheon at Centralia, November 2, in honor of the wives of visiting doctors attending the meeting of the Southern Illinois Medical Association. Forty-three ladies attended the luncheon. In the evening the Auxiliary and visiting ladies were guests at a banquet, following which a special meeting of the Auxiliary was held. The speaker of the evening was Mrs. Philip Kreuscher of Chicago. Her talk was very interesting and pertained to the activities and organization of the Auxiliary. Short talks were also given by Mrs. I. L. Foulon of East St. Louis, Councilor of the 10th District and county president of St. Clair Auxiliary, and Mrs. H. H. Hurd, State Chairman of Hygeia.

St. Clair County. After three months recess the St. Clair County Auxiliary resumed meetings in October. The membership committee is making an effort to add new members and the chairman and president have made eleven calls on prospective members. A successful benefit card party was held on October 28 for the purpose of raising money for Hygeia work in the county. The state chairman of Hygeia is from St. Clair County and the members are all doing their part to aid in her plans. We were very much pleased and honored to have Mrs. Solomon Jones at our November meeting. She gave a very inspiring address to a large gathering of members and wives of doctors of the county. We very much appreciated this visit, for we felt that we were helped by Mrs. Jones' cordial interest and friendly and helpful suggestions. We plan to have a large public relations meeting in February to which we will invite all other clubs of the county.

Rock Island County. An unusually large attendance of members marked the session of the Woman's Auxiliary to the Rock Island County Medical Society in the Rock Island County Tuberculosis Sanatorium, October 9. Mrs. Ruth Mayos, probation officer, spoke most interestingly of her work, and later Mrs. Caroline Juhl, superintendent of the sanatorium, who acted as hostess, served luncheon, assisted by the nurses of the hospital.

Sangamon County. Mrs. E. E. Heglar, President of the Woman's Auxiliary to the Sangamon County Medical Society, gave a tea to the members at the University Club in Springfield on the afternoon of October 6. Dr. John R. Neal gave the address of the afternoon, "The Advantages of the Woman's Auxiliary to the Medical Profession." On November 3, Mrs. Solomon Jones was the honor guest at the regular luncheon and meeting. She gave her intimate experiences in Auxiliary work from the standpoint of the county, state and national.

Vermilion County. Members of the Vermilion County

Medical Society held their monthly meeting at the Danville Woman's Club on November 7 with a dinner followed by an interesting program. Dr. E. G. C. Williams of Danville gave a talk on "Growing Old Gracefully." His discourse was filled with interesting and instructive facts, with a bit of humor about how different people approach the age of maturity. There was lovely music. Some very enlightening facts about the proposed new food and drug act were brought to the members of the Auxiliary by Mrs. O. H. Crist. This bill will probably be brought up before the next congress. Mrs. Jones gave a report of the recent national meeting and outlined the duties and work of the different board members of the state Auxiliary. The annual Christmas party is scheduled for December 5.

Will-Grundy County. The first meeting of the Auxiliary was held November 7 at the home of Mrs. L. J. Frederick, President, at Joliet, with twenty-five present, including three honorary members and three new members. Mrs. Frederick extended greetings and introduced new officers for the year, after which she outlined a program of activities. These include a meeting once a month with the Chairmen of Social, Philanthropy, Legislation, Education and Public Relations presenting programs emphasizing their respective departments. Dr. Bernard Klein, President of the Will-Grundy County Medical Society, addressed the members on the relation

of the doctor's wife to her community, after which the members retired to the dining room for tea and chatter. The next meeting will be held December 6 at the home of Mrs. John Carey, Chairman of the Philanthropy Committee. This committee will sponsor a "Treasure Chest"—treasures to be toys and books, Christmas gifts for crippled children. The chest will be given to the junior department of the Woman's Club for distribution.

Coles-Cumberland County. The Woman's Auxiliary to the Coles-Cumberland County Medical Society had the State President, Mrs. Solomon Jones, as the speaker at a meeting on September 29. This was held at the home of Mrs. W. R. Rhodes, Toledo. Mrs. Jones gave a most inspiring and helpful talk.

Saline County. Saline County is to have an Auxiliary. All plans are made to have the first meeting on December 19, to be followed by a Christmas party for all doctors and their wives in the county.

NATIONAL BOARD MEETING

A meeting of the Board of the Woman's Auxiliary to the American Medical Association was held in Chicago on October 27. Reports of officers and chairmen were given which indicated progress in organization and plans of work.

EVERY ETHICAL PHYSICIAN IN THE STATE SHOULD BELONG TO THE ILLINOIS STATE MEDICAL SOCIETY

In numbers there is strength. United we stand, divided we fall. A united medical profession can brush away any and all obstacles. It is next to impossible to find a really successful physician who has obtained fame outside the pale of organized medicine.

Are all the eligible physicians in your county members of your local medical society? If non-members of local society are discovered get busy and try to induce them to join at the earliest opportunity.

Since the publication of the last edition of the

national medical directory, one thousand or more recent graduates and practitioners from other states have located in cities in Illinois. Great numbers have moved within the state from one city to another; an alarming number of physicians have died in the interim; hundreds have moved to other states and a similar number have come into Illinois from other commonwealths.

Below we publish as nearly as possible correct and up-to-date list of physicians residing in towns and cities in Illinois outside of Chicago and Cook County. No attempt had been made to indicate membership in local, state or national medical societies.

The final list of doctors residing outside of Cook County will appear in the forthcoming issue.

ABINGDON (KNOX)

Bradway, Everett Haworth
Meloan, Jos. F.
Rapuzzi, Jos. Edward
Rowe, Jesse
Weir, Clark E.

ADDIEVILLE (WASHINGTON)

Schroeder, Louis P.

ADDISON (DU PAGE)

Brust, Emil Wm.

AKIN (FRANKLIN)

Hamilton, Geo. McClellan

ALBANY (WHITESIDE)

Dimond, Stacy B.

ALBION (EDWARDS)

Apple, Elmer Lawrence
Boston, Andrew Jackson
Brannan, Chas. S.
Moter, Ross Lee

ALEDO (MERCER)

Johnston, Robt. Curry
Mackey, Albert Newton
McClanahan, Victor A.
Moore, Geo. Henry
Rodgers, James Jacob
Sells, Arthur C.
Stites, Hugh Dinsmore
Wallace, James W.

ALEXIS (WARREN)

Crosier, Wm. McKee
Winbigler, Edw. S.

ALGONQUIN (McHENRY)

Beard, Guy Edward
Sculley, Jesse Casstevens

ALLEDALE (WABASH)

Gilliatt, Claude E.
Gray, Frank S.

ALLERTON (VERMILION)

Hardman, Elijah Leonard

ALMA (MARION)

Laswell, Saml. L.

ALPHA (HENRY)

Rothert, Herman

ALSEY (SCOTT)

Bowman, Geo. W.

ALTA (PEORIA)

Allen, Walter H.

ALTAMONT (EFFINGHAM)

Schumacher, Harry Wm.

Stein, Henry

Wright, Chas. M.

ALTON (MADISON)

Baier, Augustus, 1114 Henry St.; office (East Alton)

Bowman, Lincoln M., 1101 E. 5th St.

Brunk, Thos. L., 1633 Washington Ave.

Burnap, Henry Thompson, 2602 College Ave.

Carpenter, Thos. Alan, Alton State Hospital

Carson, Oliver Edward, 2342 State St.;

office, 202 E. Broadway

Castle, Stanley, R. D. 2

Cruzat, Roscoe M. (col.), 1916 Gross St.; office, 217A W. 3d St.

Davis, Homer Willard, 312 E. 11th St.; office, 215 E. Broadway

Day, Walter August, 3003 Brown St.; office, 205 W. 3rd St.

Dempsey, Wm. H., 319 Prospect St.; office, 205 W. 3d St.

Eichelberger, Wm. Wirt, Alton State Hospital

Emons, Clifford Wallace, 400 Henry St.; office, 215 E. Broadway

Enos, Edw. Wm., 1917 Beall Ave.; office, Illinois Glass Company

Enos, Wm. H., 325 E. 3d St.

Fiegenbaum, Julius H., 628 Henry St.; office, 308 Belle St.

Fischer, Edward Fredk., 2400 Edwards St.; office, 1524 Washington Ave.

Fisher, Waldo, 503 Summit St.; office, 205 Piasa St.

Giberson, Oria Orton, 538 E. Broadway

Hale, John Peter, 1620 Washington Ave.; office, 200 W. 3d St.

Halliburton, Westley W., 32 W. Broadway

Hastings, James Barnard (5475 Cabanne St., St. Louis); office, 205 W. 3d St.

Hayes, Louis Hodd, 1101 Main St.; office, 620 E. Broadway

Joesting, Fredk. Christian, 1420 Liberty St.; office, 4 W. Broadway

Jones, Fred Wade, 926 Langdon St.; office, 101 E. Broadway

Mayfield, Carey Boyd, Alton State Hospital

McColl, Nettie Iona, Alton State Hospital

McCuiston, Hubert Preston, 2449 Mills Ave.; office, 200 W. 3d St.

McGinnis, Wm. Schlafly, 719 River-view St.; office, 103 Broadway

Merkle, Clarence Edward, 709 Riverside Dr.; office, 14 E. Broadway

Merkle, Roy Wm., 616 E. 6th St.; office, 14 E. Broadway

Merritt, Nina Polson, 616 3d St.

Middleton, Harry Ernest, 2723 Hillcrest Ave.; office, 103 E. Broadway

Miller, Thos. Wm., 1113 State St.; office, 203 E. Broadway

Morgan, Thos., 2511 State St.

Pfeffenberger, Mather, 463 Bluff St.; office, 101 E. Broadway

Roberts, Dewey Minnis, 1922 Washington Ave.; office, 614 E. Broadway

Robertson, Alexander Peter, 3029 College Ave.; office, 102 W. 3d St.

Samuels, Geo. Lincoln (col.), 1928 Marilla St.; office, 120 W. 3d St.

Smith, Groves Blake (see Godfrey)

Stewart, James C., Alton State Hospital

Trovillion, Charles E., 2210 Washington Ave.; office, 619 E. Broadway

Vanatta, Clyde Lawrence

Walton, John Edward, 2603 College Ave.

Watson, James Edwin, 2608 State St.

Watson, S. M., 271 Madison Ave.

Wilkinson, Geo. E., 1050 Washington Ave.; office, 209 Alby St.

Williamson, Maurice Rulon, 1411 Main St.; office, 2 E. Broadway

Worden, Geo. Kent, 3107 College Ave.; office, 200 W. 3d St.

ALTONA (KNOX)

Keener, Albert Chester

ALTO PASS (UNION)

Enlow, Chas. Egbert

Stearns, Claude Adams

AMBOY (LEE)

Holladay, Wm. Theodore

Sullivan, Eugene A.

Zeigler, Chas. Arthur

ANNA (UNION)

Benner, Wm. John

Benton, Thos. Jos.

Cohen, Benj.

Eddleman, Wm. Ralph

Goodner, Ralph Allison

Hale, E. Vincent

Hamilton, Angelina G.

Hess, Emory Le Roy

Keith, Leander D.

Keith, Roy

May, Leon Jordan

Nobles, Chas. David

Phillips, Harry

Skorodin, Bernard

Stewart, Don Boyd

Taylor, Harry Otto

ANNAPOLIS (CRAWFORD,

Bartmess, Leonard Ernest

ANNAWAN (HENRY)

Foote, Casper Hartman

Young, James McClain

ANTIOCH (LAKE)

Beebe, Harry Ferris

Deering, David N.

Leslie, Eleanor Isabel

Smith, Halley Ambrose

Warriner, Winsor W.

Williams, Roy D.

APPLE RIVER (JO DAVIESS)

Brink, Chester Abram

Childs, Chas. F.

ARCADIA (R. D. Jacksonville)

(MORGAN)

Obermeyer, Albert Everett

ARCOLA (DOUGLAS)

Allen, Elmer Sherman

Barnes, Omer Foutz

Fortney, Millard Hunter

McCain, John H.

Moser, Geo. Henry

ARENZVILLE (CASS)

Crum, Geo. W.

Streuter, Albert Frank

ARGENTA (MACON)

Freeman, Joel C.

Greenfield, Chas. Claud

ARGO (COOK)

Allison, Robt. Howard

Barclay, Robt. Donaldson

Frisbie, Anthony Wayne

Iiletko, Paul

Mann, Sidney Louis

Plucinski, Stanislaus Jos.

Rush, Paul White

ARMINGTON (TAZEWELL)

Regnier, Walter Ovid

AROMA PARK (KANKAKEE)

Worstall, Saml. A.

ARROWSMITH (McLEAN)

Johnson, Lyford M.

ARTHUR (DOUGLAS)

McDonald, Chas. Henry

Norris, Clarence Oliver

Phillips, Floyd

Volborn, Albert Lawrence

ASHKUM (IROQUOIS)

Denyes, Orville Leston

ASHLAND (CASS)

Taylor, Walter Sherwood

ASHLEY (WASHINGTON)

Sanders, Claude Jacob

ASHMORE (COLES)

Carrico, Preston O.

ASHTON (LEE)

Calhoun, N. Curtis

Hanawalt, Casper G.

ASSUMPTION (CHRISTIAN)

Coyne, Thos. Arthur

Miller, Wilfred Stare

Rivard, Geo. J.

Zobrist, Benj. Franklin.

ASTORIA (FULTON)

Baxter, Harry Toler

Betts, Wm. Henry

Emerson, Edw. Paul

Fuson, Alonzo Allen

Toler, Thos. W.

ATHENS (MENARD)

Hill, Tolbert F.

Hullerman, Hugo Vincent

Moffett, Wm. Thos.

ATKINSON (HENRY)

Downs, James N.

ATLANTA (LOGAN)

Burke, Chas. Oren

Hutton, Chas. Jesse

Ijams, Russell Lynn

Lee, Maskel

ATWOOD (PIATT)

Veach, Saml. Jos.

Weir, Edgar Wilkin

AUBURN (SANGAMON)

Brittin, Ernest Herbert

Hart, Sterling Perry

AUGUSTA (HANCOCK)

Camp, Julian E.
Cooper, Earl
Wade, Edward H.

AURORA (KANE)

Agnew, Chas. Livingston (col.), 653 N. May St.; office, 67 S. Broadway
Allen, Geo. Frank, 149 S. 4th St.
Anderson, James Harlan, 1310 Garfield Ave.; office, 2 N. Broadway
Anderson, Leland Hurd, 749 Oak Ave.; office, 2 S. Broadway
Bailey, Arthur Thos., 50 S. 4th St.; office, 33 Leland Ave.
Balthazar, Eugene Regis, 9 S. Spencer St.; office, 2 S. Broadway
Banker, Edward U., 219 W. Park Ave.; office, 323 Main St.
Bartlett, Fred A., 27 S. Lake St.
Benson, Arnold Sigfrid, 901 S. 4th St.; office, 2 S. Broadway
Boger, Thos. Abram (col.), 1217 Indian Ave.; office, 27 N. Broadway
Bouslough, Elmer E., 411 Spring St.; office, 42 S. Broadway
Brennecke, Herman A., 70 Commonwealth Ave.; office, 323 Main St.
Collins, Richard Kenneth, 253 S. Highland Ave.; office, 323 Main St.
Colwell, Chas. E., 178 S. Lake St.
Coughlin, Frank J., 444 Spring St.; office, 15 S. Broadway
Curtis, Wm. Edward, 111 S. Lancaster Ave.; office, 9 Downer Pl.
Cutter, Cyrus H., R. D. 1
Darnier, Geo. Alex, 922 Downer Pl.; office, 2 N. Broadway
Denney, Elliott Stevenson, 1319 Downer Pl.; office, 33 Island Ave.
Dienst, Richard Carl, 1050 Garfield Ave.; office, 33 Island Ave.
Diller, Adam Elmer, 415 Liberty St.; office, 26 S. River St.
Dreyer, John W., 513 N. Lake St.; office, 33 Island Ave.
Evans, David J., 15 S. View St.; office, 2 N. Broadway
Garrison, Fredk. Franklin, 214 S. Fordham Ave.; office, 2 S. Broadway
Graham, Robt. Hugh, 115 S. Fordham Ave.; office, 323 Main St.
Haan, Geo. W., 425 Marion Ave.; office, 28 Fox St.
Holmblad, Edward Chas.
(See Chicago)
Howard, Irwin Wilson, 61 Le Grand Blvd.; office, 32 S. Broadway
Kaiser, Karl John, 164 S. Gladstone Ave.; office, 30 Island Ave.
Kitenplon, Arthur Nuta, 303 Lawndale Ave.; office, 25 S. Broadway
Klein, Saml., 838 Lebanon St.; office, 4 N. Broadway
Klonhaus, Alfred Paul, Copley Hospital
Lamhart, Thos. Jefferson, 423 Blackhawk St.; office, 5 Downer Pl.
Lee, Emmett Lehr, 343 Evans Ave.; office, 2 S. Broadway
Maginnis, Francis Nicholis, 500 N. View St.; office, 10 S. Broadway
McCullough, Jefferson Davis, Jr., 517 S. 4th St.; office, 18 S. Broadway
McLaughlin, Ardsley H., 422 S. 4th St.; office, 30 Island Ave.

Meister, Earl Edward, 630 Talma St.; office, 2 S. Broadway
Milbacher, Walter Herman, 3 S. Lancaster Ave.; office, 33 Island Ave.
Miller, Saml. Douglas III, Copley Hospital
Moore, Albert W., 257 Downer Pl.; office, 33 S. River St.
Murphy, James Orvil, 410 Simms St.; office, 231 N. Broadway
Murphy, John Campbell, 302 Downer Pl.; office, 59 Fox St.
Murphy, Wm. L., 146 Le Grand Blvd.; office, 59 Fox St.
Pritchard, James Eugene, 242 Plum St.; office, 42 S. Broadway
Pulfer, Bernard J., 602 Liberty St.
Putnam, Glenn Worthy, 183 S. 4th St.; office, 33 Island Ave.
Reder, Augustus Ralf, 15 S. May St.; office, 33 Island Ave.
Rice, Imas Pryor, 727 N. Oak Ave.; office, Kane County Spring Brook Sanitarium
Ricker, Sumner J., 149 LaSalle St.; office, 46 S. Broadway
Ritzman, Ralph Roscoe, 338 Lawndale Ave.; office, 67 Fox St.
Robertson, Clarence Wm., 1340 Garfield Ave.; office, 2 S. Broadway
Rogers, Percy Earl, 425 W. Park Ave.; office, 9 Downer Pl.
Rollins, Frank D., 15 S. Lincoln Ave.; office, 115 Main St.
Rudolph, Martin E., Elks Club; office, 33 Island Ave.
Schwingel, Wm. Henry, 231 S. 4th St.; office, 2 S. Broadway
Sherman, Wm. Palmer, 435 N. Lake St.; office, 30 Island Ave.
Stubbs, Edwin Wilfred, R. D. 1
Thomas, Elmer Merrill, 736 Grand Ave.; office, 108 Main St.
Turner, Rolland Vincent, 111 Le Grand Blvd.; office, 323 Main St.
Uehren, Wilbur Andrew, 352 N. Lake St.; office, 44 Downer Pl.
Venn, Walter T.
(See Chicago)
Weller, Chas. Grafton, 639 Galena Blvd.; office, 103 Main St.
Westgate, Letitia A., 636 Fox St.
Widmer, Nelson David, 323 Main St.
Wilson, Wm. Wellford, 185 Lincoln Ave.; office, 323 Main St.
Witt, John Desha, 104 Wilder St.
Worthington, David Henry, 569 Fox St.; office, 51 Fox St.
Young, Edmund Valient, 120 Ingleside Ave.; office, 25 S. Broadway

AVA (JACKSON)

Bennett, John
Culp, Theodore W.
Usery, Raymond E.

AVON (FULTON)

Davis, Ernest E.

BARNHILL (WAYNE)

Simpson, Jos. II.

BARRINGTON (LAKE)

Brooke, Deane Francis
Graber, Benj. Peter
Kleinwachter, Earl Albert
Nelson, Curtis
Weichelt, C. V. Arthur

BARRY (PIKE)

Kaylor, Thos. D.
Kuntz, Wesley W.
Main, Rufus II.

BARTONVILLE (PEORIA)

Borin, Geo. Marion
Borin, Wm. A.
Williams, Herbert Lewis

BASCO (HANCOCK)

Stowe, Israel Fred

BATAVIA (KANE)

Bothwell, Roy Sunderland
Hubbard, Oscar Wilhelm
Mestrom, Henning Theodore
Simon, Oliver Bernard
Spencer, Annie Whitney
West, John Chas.
Zimmerman, Amelia

BATCHTOWN (CALHOUN)

Wood, Harry

BEARDSTOWN (CASS)

Athey, Geo. Lewis
Charles, Thomas Goodell
Garm, Roy Henry
Haworth, Dale Emmett
Holland, Wilbur Wallis
McElroy, Wm. Taylor
Mix, Walter Spaulding
Soule, Chas. Emerson
Vernon, Geo. Heywood

BEASON (LOGAN)

Hollister, Bruce Allan

BEAUCOUP (WASHINGTON)

Neer, David S.

BEAVERVILLE (IROQUOIS)

Anthony, Paul Henry

BEECHER (WILL)

Hiatt, Homer Sam
Kupke, Edward Henry W.
Miley, Michael Ritter
Van Voorhis, Danl. Dewitt

BEECHER CITY (EFFINGHAM)

Parmenter, Geo. Henry

BELLAIR (CRAWFORD)

Ferguson, Robert A.

BELLEVILLE (ST. CLAIR)

Bahrenburg, Wm., 223 E. Main St.
Baldress, Chas. Edward, Jr., 310 S. Charles St.; office, 21 S. High St.
Bauer, Gustav Lewis, Jr., 708 E. Washington St.; office, 7 N. High St.
Baumann, Chas. Hugo, 16 N. Jackson St.
Bechtold, August Fredk., 1305 W. Main St.
Bechtold, Edmond, 3317 W. Main St.; office, N. Illinois St.
Davis, Irvin W., 321 S. Missouri Ave.; office, 116 E. Main St.
Dew, Walter Albert, 513 E. B St.; office, 115a E. Main St.
Duckworth, John Frank, Scott Field
Duey, Delmer R., 25 S. 78th St.; office, 115a E. Main St.
Fisher, Harrison Horton, Scott Field
Frein, Harry Jos., N. Illinois St.; office, 18 W. Main St.
Hansing, Adolph E., 300 N. Illinois St.

Heely, Louis Andrew (St. Libory); office, 9 N. Jackson St.
 Heiligenstein, Rudolph C., 11 S. Virginia St.; office, 29 W. Main St.
 Hoffmann, John, R. D. 2
 Huggins, Chas. R., 517 Park Ave.; office, 10a S. High St.
 Huwacheck, Frank Geo., 100 E. Main St.
 Joseph, Raymond John, 6 Country Club Pl.; office, 230 E. Main St.
 Kissel, Andrew, 2100 W. Main St.
 Lougeay, Saml. McKee, 314 East E St.; office, 230 E. Main St.
 Martin, Cecil Lawrence
 Massie, John Gore, N. 82nd St.; office, 29 E. Main St.
 McKelvey, Saml. Wheelles, 304 Portland Ave.
 Meyer, Geo. Edwin, 209 N. 48th St.; office, 20 Public Sq.
 Ogle, Oliver Lee, 7301 W. Main St.
 Otrich, Grover Cleveland, N. 66th St.; office, 7 N. High St.
 Portuondo, Buenaventura H., 203 Abend St.; office, 401 E. Main St.
 Raab, Ernst Phillip, 301 S. High St.
 Reis, Henry, 110 Wabash Ave.
 Renner, Chas. Peter, 120 E. Washington St.; office, 11 S. Church St.
 Reuss, Albert Leroy, 315 Wabash Ave.; office, 116a E. Main St.
 Roth, Leslie Wm., 3404 W. Main St.; office, 7 N. High St.
 Runyon, Wesley Claude, 1819 W. Main St.
 Sasville, Ernest Max, R. D. 5
 Scruggs, John B., 121 S. Illinois St.
 Starkel, Chas. H., 119 S. Charles St.; office, 409 E. Main St.
 Stiehl, Elmer Philip, 7 Kircher Pl.; office, 12 West A St.
 Twitchell, Benj. E., 107 East D St.; office, 16 S. High St.
 Twitchell, James W., 16 S. High St.
 Twitchell, Standlee Irving, 505 S. Missouri Ave.; office, 16 S. High St.
 Waldman, Jos. Sterling, 100 N. 31st St.; office, 117 E. Main St.
 Wangelin, Evans Hugo, 326 S. Pennsylvania Ave.; office, 7 N. High St.
 Wheeler, James Earle
 Wilson, Clyde Schwerin, 706 Sycamore St.; office, 7 N. High St.
 Zepin, David, 1418 W. Main St.; office, 16a N. High St.

BELLMONT (WABASH)
 Brian, Chas. Fredk.

BELVIDERE (BOONE)
 Alguire, Alden
 Alguire, Annie B. McCallum
 Dettmann, Everett Fred
 Freeman, Wm. M.
 Hall, Frank Wilford
 Hartman, Minor Leroy
 (See Garden Prairie)
 Hollnagel, Chas. Wm.
 Hood, Kenneth Lindsay
 Kaske, Gordon John
 Markley, A. J.
 McCracken, Clara Bywater
 Swift, Arthur W.
 West, John Frank
 Whitman, Frank S.

BEMENT (PIATT)
 Bruner, Allen Maxwell
 Burgett, Warren Eugene
 McPherson, Warren Gordon

BENLD (MACOUPIN)
 Creane, John Chas.
 Zerbolio, Dominic Jos.

BENSENVILLE (DU PAGE)
 James, Matthew Wm.
 Oakes, Fredk.

BENSON (WOODFORD)
 Seidl, Ferdinand

BENTON (FRANKLIN)
 Alvis, Edw. Carroll
 Alvis, Walter Hiram
 Buntin, Grover Cleveland
 Gore, Geo. Walton
 Harris, Monroe
 Hart, J. Otis
 Moore, Geo. Gail
 Moore, John Beverly
 Moore, Jos. E.
 Moore, Laurence Moses
 Moore, Sydney Clayton
 Smith, Wm. H.
 Vise, Hosea A.

BERRY (SANGAMON)
 Reed, John F.

BETHALTO (MADISON)
 Reuter, Walter Jos.
 Thrailkill, Jos. S.

BETHANY (MOULTRIE)
 Coffey, Roy Calhoun
 Donovan, Ophius Poston

BIBLE GROVE (CLAY)
 Falley, Richard L.

BIGGSVILLE (HENDERSON)
 Babcock, Milton John
 Henderson, Wm. D.
 Noyes, Frank A.

BIG ROCK (KANE)
 Marion, Norman Edw.

BINGHAM (FAYETTE)
 Haynes, Moses

BIRDS (LAWRENCE)
 Montgomery, John W.

BLANDINSVILLE (McDONOUGH)
 MacPherson, Chas. Herbert
 Markee, Henry

BLOOMINGTON (McLEAN)
 Ball, Orrie Hugh, Jr., 1703 E. Washington St.; office, 219 N. Main St.
 Behrendt, Edmund Adelbert, 108 W. Wood St.; office, 211 N. Main St.
 Brian, Fredk. Willard, 17 White Pl.; office, 421 N. Main St.
 Brown, Edward Iyman, 31 White Pl.; office, 118 N. Center St.
 Cantrell, Thos. D., 1201 E. Jefferson St.; office, 310 E. Jefferson St.
 Casner, Andrew James, 1501 Clinton Blvd.; office, 120 N. Center St.
 Cavins, Lester Blake, 1105 N. Fell Ave.; office, 118 N. Center St.
 Cline, Gerald Morris, 1114 Elmwood Rd.; office, 214½ E. Washington St.
 Condon, John Jos., 1306 N. Main St.; office, 220½ N. Center St.

Deneen, Frank 319½ E. Chestnut St.; office, 219 N. Main St.
 Dolley, Homer Odell, 605 Virginia Ave.; office, 421 N. Main St.
 Elliott, Jos. Norman, 607 E. Chestnut St.; office, 214½ E. Washington
 Fenelon, John H., 311 E. Locust St.; office, 219 N. Main St.
 Fielding, Floyd Emerson, 106 Warner Ave.; office, 110 E. Monroe St.
 Fisher, Frank C., 608 E. Jefferson St.; office, 219 N. Main St.
 Fulwiler, John Walter, 618 E. Walnut St.; office, 211 N. Main St.
 Gailey, Watson, Wm. Jr., 5 White Pl.; office, 221 N. Main St.
 Grote, Henry Wallace, 305 N. Evans St.; office, 219 N. Main St.
 Hart, Edson B., 1314 Fell Ave.; office, 221 N. Main St.
 Hartenbower, Geo. Earl (Normal); office, 201 N. Main St.
 Hatcher, Wm. Benj. (col.), 1101 W. Washington St.
 Hawks, Jos. K. P., 1112 Fell Ave.; office, 219 N. Main St.
 Henderson, Frank Harold, 1104 E. Jefferson St.; office, 221 N. Main St.
 Howell, Harry Lee, 410 E. Front St.; office, 214 E. Washington St.
 Irwin, Lawrence Leslie, 303 E. Jefferson St.; office, 217 N. Main St.
 Jones, Clyde Carroll, 1103 E. Jefferson St.; office, 219 N. Main St.
 Keller, Alvin, 1223 E. Grove St.; office, Roland Bldg.
 Kelso, Geo. Benson, 801 N. Main St.
 Leary, Chas. Earl, 105 E. Empire St.
 Loar, Ralph Rinehart (Normal); office, 118 N. Center St.
 Mammen, Ernest, 303 E. Chestnut St.
 Markowitz, Benj., 1108 Elmwood Rd.; office, 219 N. Main St.
 Marquis, Vincent Prush, 613 E. Grove St.; office, 219 N. Main St.
 McIntosh, James Robt., 214 E. Washington St.
 McNutt, James Carson, (Normal); office, 221 N. Main St.
 Meyer, Albert W., 606 W. Jackson St.; office, 115½ Front St.
 Raber, Daniel Dcronda, (Normal); office, 118 N. Center St.
 Rhodes, Ora M., 1116 E. Grove St.; office, 101 W. Jefferson St.
 Rigg, James R., 1418 N. Clinton Blvd.; office, 118 N. Center St.
 Rost, Theodore August, 212 E. Mulberry St.; office, 102 E. Jefferson
 Shultz, Chas. Ellis, 509 N. Clinton St.
 Sloan, Edwin P., 1417 N. Main St.; office, 219 N. Main St.
 Sloan, Guy Arthur, 1703 E. Washington St.; office, 219 N. Main St.
 Sloan, Howard Parks, 1501 N. Clinton St.; office, 219 N. Main St.
 Small, Geo. H., 801 E. Monroe St.; office, 302 N. Main St.
 Smith, Jos. Whitefield, 1122 E. Grove St.; office, 219 N. Main St.
 Stevenson, Edgar McLean, 1311 Clinton Blvd.; office, 211 N. Main St.
 Watkins, Harold Ryburn, 1319 Clinton Blvd.; office, 221 N. Main St.
 Weiland, Edw. E. G., 404 E. Douglas St.

Wellmerling, Hermann Wm., 1411 E. Grove St.; office, 219 N. Main St.
 Wikoff, Clarence P., 304 E. Mulberry St.
 Winget, Sanford E., 102 W. Front St.
 Yolton, Leroy Wm., 208 E. Jefferson St.
 Yolton, Rhoda Galloway, 208 E. Jefferson St.
 Young, Wm. M., 10 White Pl.; office, 221 N. Main St.

BLUE MOUND (MACON)

Bressner, Walter Arthur
 Matthew, John B.
 Montgomery, Clinton Levi

BLUFFS (SCOTT)

Alvarez, Manuel
 Evans, Chas. A.

BLUFORD (JEFFERSON)

Ellis, Chas. Lewis
 Goodrich, Wm. Ray

BOGOTA (JASPER)

Booker, Carroll

BONE GAP (EDWARDS)

Kitchen, J. Edward
 McCormack, James L.

BONFIELD (KANKAKEE)

Schmidli, Charles
 Yeates, Wm.

BOWEN (HANCOCK)

Folkemer, Harry Rox
 Ketchum, Ellen Pauline
 McKim, John B.

BRADFORD (STARK)

Mitchell, Wm. C.
 Scholes, James Edward
 Terwilliger, Viola E. Shaw

BRADLEY (KANKAKEE)

Goodwin, Andrew J.
 (See Kankakee)

BRADWOOD (WILL)

Arnold, Romus
 (See Joliet)
 Frick, Walter Calvin

BREESE (CLINTON)

Morony, James J.
 Sauer, Wm. Henry
 Warren, Halleck Burkitt

BRIDGEPORT (LAWRENCE)

Fritz, Geo. W.
 Lewis, Chas. Marius
 Mangum, Wm. Robt.
 Schrader, John Frank
 Thompson, John Richardson

BRIGHTON (MACOUPIN)

Ash, John Roscoe
 Gillham, Anna Merrill
 Hall, Thos. Henry
 Horine, Thomas A.

BRIMFIELD (PEORIA)

Roherts, Roy B.
 Welsh, John Edward

BROADLANDS (CHAMPAIGN)

Dicks, Thos. A.

BROCTON (EDGAR)

Handley, Chas. A.

BROOKPORT (MESSAC)

Gann, Jos. Henry

BROUGHTON (HAMILTON)

Williams, Jos. S.

BROWNS (EDWARDS)

Niemiller, August H.

BRUSSELS (CALHOUN)

Miller, Sam Louis Alhert

BRYANT (FULTON)

Axline, Clarence E.

BUCKLEY (IROQUOIS)

Bossart, Harry S.

BUDA (BUREAU)

Taylor, John F.

BUFFALO (SANGAMON)

Black, Orville Evans
 Thacker, Edgar Abney

**BUFFALO PRAIRIE
(ROCK ISLAND)**

Marquis, Benj. V.

BUNCOMBE (JOHNSON)

Main, Russell Burton

BUNKER HILL (MACOUPIN)

Bley, Robert E., Jr.
 Fuchs, Albert Eugene

BURLINGTON (KANE)

Roach, David Collins

BURNT PRAIRIE (WHITE)

Funkhouser, Roht. M.

BUSHNELL (McDONOUGH)

Griffith, John Curtis
 Mahan, Horace Porter, Elmgrove Sanitarium
 Rider, Clement J.
 Ritchey, George Fenton
 Roan, Bert
 Roark, John Paul

BYRON (OGLE)

Johnston, James Alha

CABERY (FORD)

Miller, Wm. M.

CAIRO (ALEXANDER)

Barrows, Roy Edgar, Marine Hospital; office, 808 Commercial Ave.
 Bondurant, Flint, 2821 Park Pl. W.; office, 800 Commercial Ave.
 Chamhliss, Homer (col.), 517 24th St.; office, 1312 Poplar St.
 Dickerson, Orval Melcher, 701½ Commercial Ave.
 Dunn, James Washington, 6th St. and Washington Ave.
 Gassaway, James M., 311 5th St.
 Hutcheson, Bellenden Seymour, 3003 Park Pl. W.; office, 800 Commercial
 Johnson, James Sidney, 2607 Elm St.; office, 800 Commercial Ave.
 Lottman, Wm. August (Olive Branch)
 McManus, James M., 210 14th St.; office, 808 Commercial Ave.
 McNemer, George H., 224 11th St.; office, 608 Commercial Ave.
 McNemer, Phillip Hamilton, 825 25th St.; office, 608 Commercial Ave.
 Miller, Edward Eugene, 2307 Holbrook Ave.; office, 234 8th St.
 Rendleman, John J., 2708 Washington Ave.; office, 616 Commercial Ave.
 Stuckey, Howard Davis, 1403½ Washington Ave.; office, 708½ Commercial

Weher, Chas. L., 415 Walnut St.; office, 705 Commercial Ave.

Young, Ripley Marion, 3511 Washington Blvd.; office, 1413 Commercial

CALEDONIA (BOONE)

Walgren, Roy Leo

CALHOUN (RICHLAND)

Williamson, Elza L.

CAMBRIDGE (HENRY)

Eaton, Caroline
 Eaton, Matilda
 Mathre, Alhert Ilmer
 Westerlund, Jos. E.

CAMDEN (SCHUYLER)

Hayes, Frank Crawford

CAMERON (WARREN)

Zimmerman, Henry Samuel

CAMPBELL HILL (JACKSON)

Busse, Henry Fred

CAMP POINT (ADAMS)

Bates, Amos D.
 Martin, Ralph Danl.
 Pittman, James Harry

CANTON (FULTON)

Adams, Jasper M., 419 N. 3d Ave.; office, 35 E. Chestnut St.
 Betts, Geo. Seymour, R. D. 7
 Chapin, Le Roy, 200 Martin Ave.; office, 62 S. Main St.
 Coleman, Everett Porter, 224 S. 1st Ave.; office, 24 N. Main St.
 Coleman, James Edmund, 656 N. Main St.; office, 24 N. Main St.
 Hays, Theodore Calvin, 204 W. Locust St.; office, First National Bank Bldg.
 Hays, Verne, 361 W. Pine St.; office, First National Bank Bldg.
 Hirschle, Harry Griffith, 245 S. 1st Ave.; office, 26 N. Main St.
 Johnston, Cecil James, 150 N. Main St.
 Maguire, Roderick Hugh, 121 W. Locust St.; office, 28 W. Elm St.
 Nelson, Mark Snowden, 376 W. Chestnut St.; office, 28 W. Elm St.
 Putman, Harrison C., 52 N. Avenue D; office, 10 E. Elm St.
 Scholes, Paul Sheldon, 372 W. Chestnut St.; office, 74 N. Main St.
 Shallenberger, Wm. E., 30 W. Pine St.; office, 80 N. Main St.
 Simmons, Jay Claude, 45 S. Avenue B; office, 18 E. Elm St.
 Vitt, Louis Leonard, 240 W. Chestnut St.; office, 32 N. Main St.
 Vitt, Rose Houda, 240 W. Chestnut St.
 Zeigler, Willis Terry, 82 N. Avenue C; office, 26 W. Elm St.

CAPRON (BOONE)

Hutchinson, Geo. Archibald.
 Hutchinson, Robt.
 Marriett, Woodman R.

CARBONDALE (JACKSON)

Barrow, James Wm.
 Bass, Jewell Lee (col.)
 Brandon, Wm. Alvin
 Brooks, Clyde M.
 Caldwell, Delia
 Crain, Burt Franklin
 Edmondson, Edward Everett
 Etherton, Fred Snider
 Etherton, Monroe

Hall, Frank Wilburn
Lingle, Fred Lee
Minner, Louis A.
(See Murphysboro)
Moss, Harry Carwin
Rodgers, Emma Washburn

CARLINVILLE (MACOUPIN)

Bell, Robt. H.
Chamness, Earl R.
Denby, John Peter
Liston, Jos. Bostick

CARLOCK (McLEAN)

Hamilton, Chas.

CARLYLE (CLINTON)

DuComb, James Wilson
DuComb, Wilson Lacey
Murphy, Jos. P.
Roane, John Quincy
Wilcox, Saml. E.

CARM (WHITE)

Brimble-Combe, Wm.
Brown, Raymond Calvin
Crebs, Berry S.
Fahnestock, Edward Ahrens
Legier, John Alfred
Legier, John T.
Sibley, Frank Cassius
Stanley, J. Zeph

CARRIERS MILLS (SALINE)

Davidson, Finis F.
Groce, Robt. E.
Hart, Adiel E.
McSparin, John Monroe.

CARROLLTON (GREENE)

Baldwin, Arthur Kirby
Jouett, Emerit E.
March, Samuel Franklin
Squire, Marguerite G.
Waggoner, Wm. Franklin
Wilson, Arthur Dickinson

CARTERVILLE**(WILLIAMSON)**

Aird, Andrew John
Boles, Dallas Seth
Coleman, James H.
Fowler, Millard M.
Hiller, Francis M.
Huff, John Preston
Vick, John W.

CARTHAGE (HANCOCK)

Ferris, Chas. Leonard
Frazier, Wilmer Phelps
Runyon, Chas. A.
Scott, Dale Freeland
Sheets, Raymond F.

CARY (McHENRY)

Copeland, Wm. Jackson
Theobald, Frank John

CASEY (CLARK)

Boyd, Rhyne Bashford
Brunker, Herschel Victor
Harris, Cyrus Munson
Johnson, Lester Howard
Lee, I. Wayne

CATLIN (VERMILION)

Dewhirst, Ernest Maxwell
Peel, Chas. Elvie

CAVE IN ROCK (HARDIN)

Gregory, Wm. Grant
Oxford, Seba Ezra

CEDARVILLE (STEPHENSON)

Thompson, Fred Rush
Thompson, Smith C.

CENTRALIA (MARION)

Black, John Earl, 720 E. 3d St.; office, Broadway and Locust St.
Brown, Rudolph H., 814 E. Noleman St.; office, 108½ S. Locust St.
Diehl, Otto Darwin, 400 W. McCord St.; office, 124½ W. Broadway
Edwards, Francis Main, 312½ E. Broadway
Gambill, Wm. Henry, 302 Linden Ave.; office, 138 S. Locust St.
Gillette, Homer Dwight, 401 Leafland Pl.; office, 105 E. Broadway
Hall, John Carroll, 420 Leafland Pl.; office, 102½ E. Broadway
Haney, James M., 104 N. Locust St.
Heller, Augustus Phillip, 128 N. Sycamore St.; office, 102 W. Noleman St.
Holloway, Elza Elvis, 614 W. Broadway; office, 138 S. Locust St.
Kissel, Julius Peter, 315 Linden Ave.; office, Broadway and Locust St.
Marshall, Chas. Pope
Noe, Philip R., 920 E. 3d St.; office, 312½ E. Broadway
Phillips, Francis Ashley, 1403 E. 2d St.; office, 138 S. Locust St.
Plassman, Walter Fredk., 235 S. Hickory St.; office, 105 E. Broadway
Rice, Thos. Warren, 403½ E. Calumet St.
Richardson, Wm. D., 203 N. Locust St.
Stoker, Wm. A., 220 N. Maple St.
Welch, Gifford Nelson, 926 E. 3rd St.; office, 147½ S. Locust St.
Williams, Harry Otto, 423 E. 2nd St.; office, 408 W. 2d St.
Wilson, Harry E., 216 S. Sycamore St.; office, 104 N. Locust St.

CERRO GORDO (PIATT)

Donovan, Herschell V.
Lamb, James Garfield
Trimmer, Albert Ogden

CHADWICK (CARROLL)

Calkins, Arthur Alfred

CHAMPAIGN (CHAMPAIGN)

Allen, Jos. R. (406 W. California Ave., Urbana); office, 1 Main St.
Appelle, Conrad Geo., 1007 W. White St.; office, 206 N. Randolph St.
Armstrong, Ray Conway, 122 W. Hill St.; office, 206 N. Randolph St.
Bach, Irwin Woodward (703 Indiana Ave., Urbana); office, 30 N. Main
Bennett, Cleaves, 712 W. Park St.; office, 113 N. Neil St.
Brewer, Emerson M., 1103 W. Park St.; office, 301 N. Neil St.
Bucher, Clarence Sylvester, 308 W. White St.; office, 209 W. University Ave.
Cavenece, Ebbert LaMonte, 307 Davidson Dr.; office, 113 N. Neil St.
Christie, Chas. Wm., 514 S. Willis St.; office, 44 Main St.
Christie, James Michael, 723 S. Elm St.; office, 44 Main St.
Cleland, James S., 211 E. Healey St.
Colwell, John Bruner, 406 N. State St.; office, 30 Main St.
Craig, Cassius M., 618 W. Hill St.

Dallenbach, John Christian, 1018 W. Church St.; office, 113 N. Neil St.
Dalton, Arthur John, 1019 W. Hill St.; office, 206 N. Randolph St.
Davis, Chas. Summer, 406 W. Springfield Ave.
Dodds, Jos. C., 622 W. Hill St.; office, 76 E. Washington St.
Draper, Edwin Lyon (306 S. Mathews Ave., Urbana); office, 627 S. Wright St.
Eade, Thomas M., 15½ E. University Ave.; office, 1512 W. Springfield Ave.
Ellis, Harry David, 112 N. Walnut St.
Finch, James Hugh, 909 W. University Ave.; office, 113 N. Neil St.
Ford, Hanby Lewis, 812 W. Green St.; office, 206 N. Randolph St.
Garrett, Sherman Scott, 708 W. Church St.; office, 311 W. University
Gernon, Gerald Deland, 406 N. Willis St.; office, 110 N. Neil St.
Gernon, John Henry, 1017 W. Hill St.; office, 113 N. Neil St.
Gray, Wm. L., 211 W. University Ave.; office, 113 N. Neil St.
Greaves, Horatio Norman (202 W. Iowa St., Urbana); office, 28½ Main
Groves, John I., 207 W. Washington St.
Hartford, Wm. Scott, 807 W. Church St.; office, 113 N. Neil St.
Hedgcock, Marcus Whitman, 122 W. Hill St.; office, 44 Main St.
Honn, Wm. M., 311 W. University Ave.
Ingram, Glen Ray, 307 N. Willis Ave.; office, 44 Main St.
Irvin, Cyrus H., 610 W. Church St.; office, 125 W. Church St.
Kariher, Harry Cullen, 712 W. University Ave.; office, 301 N. Neil St.
Kirby, Darwin, 305 W. University Ave.; office, 113 N. Neil St.
Knappenberger, T. Gaillard (301 W. Pennsylvania Ave., Urbana); office, 206 N. Randolph St.
Lamkin, Wm. Franklin, Inman Hotel; office, 209 W. University Ave.
McKinney, Ira, 1002 W. Williams St.; office, 30 Main St.
Miner, Ellen, 209 W. Eureka St.
Moss, Chas. Taylor
(See Urbana)
Newcomb, Cyrus F., 1213 W. Park Ave.; office, 113 N. Neil St.
Osborne, John Wm., 306 W. Clark St.; office, 113 N. Neil St.
Powell, John Rodger, 404 E. White St.; office, 44 Main St.
Rawlings, Harvey Francis (506 S. Mathews Ave., Urbana); office, 113 N. Neil St.
Ross, Vergil Alvin, 1002 W. Springfield Ave.; office, University Health Service
Rowan, Henry Edward (col.), 50 E. Healey St.
Scheib, Geo. F. (1002 S. Lincoln Ave., Urbana); office, 627 S. Wright St.
Scott, Darwin, 804 W. Green St.; office, 113 N. Neil St.
Schowengerdt, Wm. E., 301 E. University Ave.; office, 110 N. Neil St.
Schowengerdt, Wm. Henry, 301 E. University Ave.; office, 110 N. Neil St.

Secker, Wm. V., 806 S. Elm St.; office, 124 N. Neil St.
 Shurtz, Richard Chas., 1112 W. Williams St.; office, 44 Main St. and (Thomasboro)
 Shurtz, Straut Watson (811 W. Illinois St., Urbana); office, 305 N. Neil St.
 Spears, Chas. H., 806 W. Clark St.; office, 113 N. Neil St.
 Stilwell, Leland Manford Thos., 206 N. Randolph St.
 Sutch, Vincent Jack, 912 W. Williams St.; office, 209 W. University Ave.
 West, Jacob Hial, 113 S. Neil St.; office, 116 N. Neil St.
 Wilson, Chas. T. C., 509 W. Church St.
 Wise, Earl DeWitt, 914 W. Healey St.; office, 113 N. Neil St.
 Young, Eugene Yetman, 1016 W. Charles St.; office, 6 Main St.
 Zorger, Annie L., 1102 W. Church St.; office, 5 Main St.
 Zorger, Wm. H., 1102 W. Church St.; office, 5 Main St.

CHANA (OGLE)

Johnston, Robt. Sherwood

CHANDLERVILLE (CASS)

Boone, Howard B.
 Eversole, Garibaldi
 Franken, John G.

CHAPIN (MORGAN)

Smith, Lucien

CHARLESTON (COLES)

Alexander, John Richardson
 Barnes, Finis L.
 Bisson, Martin W.
 Bisson, Walter Clinton
 Craig, Robt. H.
 Dudley, Gerry Brown
 Duncan, Chas. Edward
 Greer, Chas. Edward
 Harwood, Clarence Hugh
 Iknayan, Nicholas C.
 Lycan, Wm. H.
 Oliver, James Alpheus
 Shaffer, Henry Alhin
 Starr, Nathan
 Swickard, Clinton Danl.
 Swickard, Wm. McHenry

CHATHAM (SANGAMON)

Bradley, Milton Maddox
 McLaughlin, Charles
 Southwick, Geo. E.

CHATSWORTH**(LIVINGSTON)**

Palmer, Franklin W.
 Seright, Thos. Clinton
 Willstead, Otterbein D.

CHAUNCEY (LAWRENCE)

Johnson, Ira Weston

CHEBANSE (IROQUOIS)

Boettcher, Mattie E. Chadwick
 Walker, Stanley Ross

CHENOA (McLEAN)

Elfrink, Benj. F.
 Kerr, Chas. Roy

CHERRY VALLEY**(WINNEBAGO)**

Klontz, Chas. Edward

CHESTER (RANDOLPH)

Aszman, Max
 Beare, John Wm.
 Fritze, Albert E.
 Gaines, Quentin McDowell
 Hoffman, Geo.
 James Wm. A.
 Newmark, Israel David
 Smith, Louis Jalmer

CHESTERFIELD (MACOUPIN)

Knoop, Wm. A.

CHESTNUT (LOGAN)

Dunn, John Wm.

CHILLICOTHE (PEORIA)

Daugherty, John W.
 Smith, Sidney Albert
 Thomas, Harry V
 Thomas, Ora F.

CHRISMAN (EDGAR)

Conn, Earl Gaines
 Huffaker, Columbus
 Jennings, James F.
 Kerrick, Chas. Lafayette
 Scott, Otto Raman
 Varner, Robt. Dixon

CHRISTOPHER (FRANKLIN)

Brayfield, Benjamin F.
 Dick, Edgar B.
 Fieldbrave, Alfred
 Odell, Dallas Texas
 Rutherford, Orra Leroy
 Shafer, Roger Dwight
 Sheerer, Walter Winfield

CISCO (PIATT)

Beckstrom-Blanchard, Martha K. J.
 Pattengill, Morrell

CISNE (WAYNE)

Bryant, Lawrence K.
 Phillips, Wm. Edgar

CISSNA PARK (IROQUOIS)

Roberts, Earl Leslie
 Roberts, Wm. Ross

CLAY CITY (CLAY)

Henderson, Curtis

CLAYTON (ADAMS)

Bryant, James Henry
 Davis, Floren Fred
 Dodd, Frank Clark

CLIFFORD (WILLIAMSON)

Sokoloff, Boris

CLIFTON (IROQUOIS)

Horn, Clinton
 Stevens, Nathaniel T.

CLINTON (DEWITT)

Bogardus, Chas. S.
 Carter, Chas. W.
 Chapin, Clarence W.
 Hooker, Henry Kent
 Kring, Chas. H.
 Marshall, Edward Humphrey
 Marshall, Wm. Riddle
 Pugh, Bernard McCarthy
 Sharkey, Wm. Brady
 Shell, Arthur Edwin
 Tyler, Aldora J.

COAL CITY (GRUNDY)

Johnson, John Frank
 Nicholson, Paul Goodsell

COAL VALLEY**(ROCK ISLAND)**

Myers, Wm. Fredk.
 Myers, Wm. Henry

COATSBURG (ADAMS)

Snider, James Tully

COBDEN (UNION)

Lingle, Willis Edward
 Tweedy, James Roy
 Wallace, Lesley Edwin

COFFEEN (MONTGOMERY)

Barry, Fredk. W.
 McDavid, John L., R. D. 2

COLCHESTER (McDONOUGH)

Hillon, Frank Henry
 Harrison, Bruce Ashton

COLFAX (McLEAN)

McIntosh, Wm. B.
 Seymour, Guy Emil

COLLINSVILLE (MADISON)

Bellinger, James Edward
 Cravens, Harvey G. Mudd
 Greaves, Robt. Henry
 Harrison, Moses W.
 Moore, Eugene Franklin
 Oatman, Christopher Lorenzo
 Range, Wm. Edgar
 Siegel, John H.
 Verneuil, Julius Louis

COLUMBIA (MONROE)

Bollinger, Edward
 Kohlenbach, Stephen
 Lark, Everard T.

COMPTON (LEE)

Owens, Edmund But
 Pool, Clarence Gilbert

CONCORD (MORGAN)

Johnson, Augustus M.

COOKSVILLE (McLEAN)

Calhoun, Greer O.

CORDOVA (ROCK ISLAND)

Humphrey, Ira Karr

CORNELL (LIVINGSTON)

Shafer, Harry Lee

COULTERVILLE**(RANDOLPH)**

Dickinson, Harry Barham
 Hendrickson, Geo. Edw.
 Kimball, Geo. Wm.
 Robertson, John Wylie

COWDEN (SHELBY)

Cherry, Thomas Ewing
 Montgomery, Edna Dougherty
 Montgomery, Ernest Martin

CREAL SPRINGS (WILLIAMS)

Blanchard, James F.
 Glass, Alonzo
 Neill, Newman J.

CRESCENT CITY (IROQUOIS)

Kenward, Roy Leslie
 Schneider, Ambrose Danl.

CRETE (WILL)

Blim, Chas.
 Boyer, John S. (Chicago Heights)
 De Alarid, Leon Jess Perez
 Kerr, Geo. Austin
 Miessler, C. F. Otto

CROPSEY (McLEAN)

Cantle, Herbert Cuthbert

CROSSVILLE (WHITE)

Harper, Augustus Defo

CRYSTAL LAKE (McHENRY)

Alford, Frank Lambert

Lindberg, Alger Victor

Pflueger, Geo. Henry

Sabin, Allen Lucien

Wedge, Athol Horatioa

CUBA (FULTON)

Ewan, Kate E. Armstrong, R. D. 1

Welch, James Wm.

CULLOM (LIVINGSTON)

Dwyer, John Gillman

Robinson, Chas. Hunter

CYPRESS (JOHNSON)

Thomson, Wm.

DAHINDA (KNOX)

Bedford, James Rosser

DAHLGREN (HAMILTON)

Cross, Roland Robert

DAKOTA (STEPHENSON)

Butterfield, Franklin Albert

DALLAS (HANCOCK)

Prescott, Harry V.

DALLAS CITY (HANCOCK)

Cleveland, Austin L.

DALTON CITY (MOULTRIE)

Stevens, Sam. Lorenzo

Wilson, G. Howard

Wilson, Ona Verne

DANA (La SALLE)

Saul, Ora Richard

DANFORTH (IROQUOIS)

Whitsitt, Wilson Henry

DANVERS (McLEAN)

Minnick, Edwin M.

Stickley, Wm. Thos.

DANVILLE (VERMILION)

Allison, Otis Wood, 1017 N. Vermilion St.; office, 9 W. Main St.

Andrews, Perl Keith, 53 S. Virginia Ave.; office, 5 Illinois St.

Arbuckle, Alphonso Taft, 825 E. Fairchild St.

Archibald, James Stewart

Babcock, Henry Stranahan, 110 Robinson St.; office, 106 N. Vermilion St.

Dale, Arthur Ernest, 1645 N. Vermilion St.; office, 106 N. Vermilion St.

Dawson, Dudley Theo., 1121 N. Harmon Ave.; office, 139 N. Vermilion St.

Baldwin, Herschel Edward, 209 Orchard Pl.; office, 106 N. Vermillion St.

Barton, Francis Wm., The Holland; office, 9 W. Main St.

Baumgart, Fredk. August, 924 N. Vermilion St.; office, 9 W. Main St.

Beck, Wm. Rufus King—Veterans Administration Hospital

Becker, Henry F., 6 N. Gilbert St.; office, 106 N. Vermilion St.

Bennett, Corna L., 116 Robinson St.; office, 41 Vermilion St.

Benson, Chas. Prue, National Home for Disabled Volunteer Soldiers

Brandenberger, Arthur Russell, 41 Vermilion St.

Brandt, Ernest H., 24 Pine St.

Caldwell, David Paul, 905 Chandler St.; office, 873 E. Fairchild St.

Carmody, Thos. James, 814 N. Walnut St.; office, 106 N. Vermilion St.

Cass, Geo. Thayer, 1515 E. Main St.; office, 9 W. Main St.

Clements, Robt., 813 N. Gilbert St.; office, 9 W. Main St.

Cloyd, Frazier N., 521 N. Vermilion St.; office, 9 W. Main St.

Cook, Claude Milton, 1216 N. Franklin St.; office, 107½ N. Vermilion St.

Coolley, Elmert Burt, 8 W. Main St.; office, 106 N. Vermilion St.

Cox, Harlan Swarner, 220 E. Woodlawn Ave.

Crispin, Saml. C., 1902 N. Gilbert St.; office, 916 E. Fairchild St.

Crist, Otto H., 1302 E. Main St.; office, 139 N. Vermilion St.

Cunningham, Modie Ezra, 930 E. Main St.

Downs, Henry B., 222 N. Logan Ave.; office, 22 W. North St.

Downs, Maggie Yelton, 222 N. Logan Ave.; office, 22 W. North St.

Dunham, Leslie Herman, 201 E. Conron Ave.; office, 139 N. Vermilion St.

Fairhall, Leo Victor, 1101 Logan Ave.; office, 127½ N. Vermilion St.

Fellows, Wm. Woods, National Home for Disabled Volunteer Soldiers

Fink, Otto Ellsworth, 1122 Sheridan St.; office, 9 W. Madison St.

Fisher, Jacob G., 1014 N. Logan St.; office, 9 W. Main St.

Fithian, Paul H.

Fletcher, Arthur John, 1215 N. Vermilion St.; office, 139 N. Vermilion St.

Funkhouser, Taylor Wilson, 210 W. Roselawn Ave.; office, 106 N. Vermilion St.

Garlitz, Arnold Wm., Veterans Administration Home

Gerety, Wm. Francis, 1712 N. Gilbert St.; office, 126½ E. Main St.

Good, Donald Cameron, 208 W. Dodge Ave.; office, 9 W. Main St.

Good, Richard Warner, Veterans Administration Home

Greenfield, Michael Breinar, National Home for Disabled Volunteer Soldiers

Gregory, Wheeler Russell, National Home for Disabled Volunteer Soldiers

Griswold, Chas. Munson, National Home for Disabler Volunteer Soldiers

Guy, John Milton, 305 W. Seminary St.

Hartsook, Francis Marion, 601 Jewell St.; office, 106 N. Vermilion St.

Hawley, Chas. Lyman K., 101 E. Main St.

Hoffman, Chas. Patrick, 1106 Chandler St.; office, 41 Vermilion St.

Hole, Melvin Leo, 119 Pine St.; office, 106 N. Vermilion St.

Hooker, Henry Frost, Wolford Hotel; office, 9 W. Main St.

Howard, Mordecai Laughlin, 107 Franklin St.

Hundley, James Burnett, 1619 N. Vermilion St.; office, 107½ N. Vermilion St.

Jewell, Benson Mundy, 6 W. Williams St.; office, 106 N. Vermilion St.

Jewell, Earl Bowen, 210 Robinson St.; office, 139 N. Vermilion St.

Johnson, Robt. Elmer, 1424 Oak St.; office, 6 N. Vermilion St.

Jones, Solomon, 604 S. Buchanan St.; office, 106 N. Vermilion St.

King, W. Ivan, National Home for Disabled Volunteer Soldiers

Landauer, Seward L., 1434½ N. Walnut St.; office, 106 N. Vermilion St.

McCaughey, Robt. Stanton, 1112 Sheridan St.; office, 106 N. Vermilion St.

Michael, Oscar James, 507 S. Main St.

Miller, Albert Merrill, 1222 Vermilion St.; office, 106 N. Vermilion St.

Miller, Wm. Rankin, 1414 Oakwood Ave.

Montfort, Roy Melloy, 1004 Lincoln Park Ave.; office, 106 N. Vermilion St.

Moore, Jean Wall, 110 Davidson Dr.; office, 106 N. Vermilion St.

Morgan, Aldine Emmet, National Home for Disabled Volunteer Soldiers

Nigh, John Wesley, National Home for Disabled Volunteer Soldiers

O'Ferrall, Robt. L., 321 Robinson St.

Potter, Geo. Alpha, office, 106 N. Vermilion St.

Rachels, James Harrison, 808 Perryville Ave.; office, 5½ N. Jackson St.

Ross, Hiram Earl, 1912 Lake Terrace Ave.; office, 9 W. Main St.

Scott, Ira Jos., 614 N. Collett St.; office, 101 N. Vermilion St.

Sherman, Cyril Fantus, Veterans Administration Home

Smith, Warren Braman, 1604 N. Walnut St.; office, 139 N. Vermilion St.

Sorenson, Raymond, National Home for Disabled Volunteer Soldiers

Steiner, Louie Leo, 305 N. Vermilion St.; office, 106 N. Vermilion St.

Van Arsdall, Ernest Payne, 22 N. Pine St.; office, 106 N. Vermilion St.

Walton, Thos. E., 41 N. Vermilion St.

Wellenreiter, Otto Francis, 103 W. Raymond Ave.; office, 106 N. Vermilion St.

Wheatley, Edward James, 1123 N. Logan Ave.; office, 106 N. Vermilion St.

Wilkinson, Charles Edward, 1611 N. Vermilion St.; office, 106 N. Vermilion St.

Williams, Edwin Gordon Culbertson, 308 W. Winter Ave.; office, 106 N. Vermilion St.

Williamson, Carl Syleman, 9 W. Madison Street

Williamson, Holland, 1516 N. Vermilion St.; office, 106 N. Vermilion St.

Williamson, James Holland, 1516 N. Vermillion St.; office, 106 N. Vermillion St.
 Wilson, Wm. Hansford, 211½ E. Main St.
 Winslow, Edwin Lincoln, 217 W. North St.; office, 41 N. Vermillion St.

DAVIS (STEPHENSON)

Seibert, Henry Hulse
 Wilson, Abram Ashley

DECATUR (MACON)

Abrams, Hymen Seelig, Macon County Tuberculosis Sanitarium
 Adams, Fred Millard, 1745 N. Church St.
 Anderson, Frank M., 600 W. William St.; office, 124 S. Water St.
 Arnold, Saml. Edwin, 1203 W. Main St.; office, 124 S. Water St.
 Bachrach, Benj., 1555 W. Macon St.; office, 128 E. Main St.
 Barnes, Lynn Moore, 124 S. Water St.
 Bell, Clarence Elliott, 1336 N. Water St.; office, 250 N. Water St.
 Bell, Wm. Henry, 957 N. Water St.
 Bohrod, Milton Geo., 1326 W. Decatur St.; office, Decatur and Macon County Hospital
 Botts, Alvers T., 1364 N. Church St., office, 301 Water St.
 Bourne, Nathan Leander, 904 W. Decatur St.; office, 250 N. Water St.
 Burstein, Hymen Jack, 541 N. Front St.; office, 250 N. Water St.
 Buxton, Thos. Chas., 903 W. Main St.; office, 239 S. Main St.
 Cannon, Vern Edward, 1616 E. William St.
 Chandler, Harriet March Day, 1159 W. Decatur St.; office, 132 E. William St.
 Chenoweth, Wm. J., 437 W. William St.; office, 129 E. William St.
 Collier, Lillie Kiser, 957 W. Wood St.
 Curry, Arthur Blythe, 1215 E. William St.; office, 128 N. Main St.
 Cussins, James St. Clair, 464 W. Decatur St.; office, 134 E. Prairie St.
 Davidson, Wm. Parr, 1147 W. Forrest Ave.; office, 124 S. Water St.
 Dudley, Erwin Frank, 1570 W. Forrest Ave.; office, 250 N. Water St.
 Eads, Saml. O., 865 W. Main St.; office, 104 N. Water St.
 Ellis, John Clinton, 568 S. Hawthorth St.; office, 339 S. Franklin St.
 Faust, John Jabez, 942 N. Main St.; office, 250 N. Water St.
 Ferguson, Fred Grant, 340 S. Monroe St.; office, 124 S. Water St.
 Fisher, James C., 612 W. Macon St.
 FitzPatrick, Martin Wm., 1851 W. Main St.; office, 250 N. Water St.
 Flinn, Fauntleroy, 1975 W. Forrest Ave.; office, 220 S. Webster St.
 Foster, Alva Curtis, 961 N. Union St.; office, 132 E. William St.
 Foster, Thos. Jefferson, 2004 E. Prairie Ave.
 Frech, Lee Orville, 1565 W. Macon St.; office, 100 S. Water St.
 Garber, Clare Alice, 452 W. Decatur St.; office, 124 S. Water St.
 Goodyear, Arthur Fowler, 1398 W. Macon St.; office, 124 S. Water St.

Grissom, Ira Vernon, 421 W. Main St.; office, 124 S. Water St.
 Haan, Geo. Wm., Jr., 206 S. Taylor Ave.; office, 226 E. William St.
 Harvey, Chas. Francis, 852 W. Wood St.; office, 124 S. Water St.
 Hayes, John Maurice, 12 Lincoln Pl.; office, 132 S. Water St.
 Hedrick, Wm. Roy, 1715 Main St.; office, 128 E. Main St.
 Hopkins, John James, 1183 W. Main St.
 Hunt, Augustus Stout, 1343 W. Decatur St.
 Jack, Cecil McKee, 451 W. Macon St.; office, 134 W. Prairie Ave.
 Johnson, Willard Judd, 906 W. Macon St.; office, 124 S. Water St.
 Johnston, Chas. Roy, 1520 Riverview Ave.; office, 250 N. Water St.
 Keller, Vincent Fredk., 135 S. Hilton St.; office, 124 S. Water St.
 Kennedy, Henry G., 621 S. McClellan St.; office, 124 S. Water St.
 Lahners, Thos., Jr., 2215 N. Edward St.; office, 250 N. Water St.
 Lindberg, Cosa Dell Haskell, 154 Manor Pl.
 Lindberg, David Oscar Nathaniel, 154 W. Court Manor Pl.; office, Macon County Tuberculosis Sanatorium
 Long, Vernon M., 2031 N. Edward St.; office, 250 N. Water St.
 Lutz, Gustav A., 205 N. Woodlawn Ave.; office, 250 N. Water St.
 Magill, Ansel Oswald, 1149 N. College St.; office, 248 N. Water St.
 Martin, Forrest Reuben, Macon County Tuberculosis Sanatorium
 McClelland, Clarence E., 700 Powers Hill; office, 254 N. Water St.
 McClelland, Preston Henkle, 222 Oak Crest
 McClelland, Silas Edward, 904 W. William St.; office, 104 N. Water St.
 McDavid, Jesse Taylor, 647 S. Crea St.; office, 104 N. Water St.
 McGowan, Edwin Chas., 525 N. Franklin Blvd.; office, 146 S. Water St.
 McLean, Edwin Philbrook, 224 Park Pl.; office, 124 S. Water St.
 Meriweather, Tyler, 646 S. Seigel St.; office, 124 S. Water St.
 Mertz, Albert Adolph, 142 S. McClelland Ave.; office, 124 S. Water St.
 Miller, John Terrence, 855 W. Wood St.; office, 124 S. Water St.
 Murfin, Walter Dean, 312 S. McClelland Ave.; office, 124 S. Water St.
 Murphy, Thos. Jos., Wabash Employees' Hospital
 Neece, Irving Harrison, 1543 W. Macon St.; office, 250 N. Water St.
 Parsons, Herbert E., 2096 W. William St.; office, 1183 W. Main St.
 Pence, Dwight A., 250 N. Water St.
 Pollock, Milton DeWitt, 6 Montgomery Pl.; office, 250 N. Water St.
 Poppele, Oubri A., 904 W. Main St.
 Puckett, Francis Leo, 563 S. Broadway; office, Wabash Employees' Hospital
 Reeves, Elisha L., 1605 N. Maple St.; office, 140 S. Water St.
 Rich, Ciney, 845 W. Forrest St.; office, 250 N. Water St.

Rivard, Geo. Jay, Jr., 637 S. Crea St.; office, 124 S. Water St.
 Roos, Edmund Carl, 160 N. Taylor Ave.; office, 134 W. Prairie Ave.
 Rose, Milton Edward, 610 S. Monroe St.; office, 134 W. Prairie Ave.
 Saling, Wm. J., 224 S. Edward St.; office, 124 S. Water St.
 Sanders, Robt. Zink, 626 S. Siegel St.; office, 104 N. Water St.
 Simon, Arthur Chas., 853 W. Forest Ave.; office, 250 N. Water St.
 Smith, Chas. Rainer, 723 W. Cushing Ave.; office, City Hall.
 Smith, Dale DeWitt, 1624 N. Union St.; office, 250 N. Water St.
 Smith, Frank Elbert, 504 S. Crea St.; office, 250 N. Water St.
 Smith, Stanton Gaston, 1937 E. Williams St.; office, Wabash Employees' Hospital
 Spyker, John Huston, 666 S. Siegel St.; office, 104 N. Water St.
 Stanley, Dean Field, 224 Home Ave.; office, 250 N. Water St.
 Stanley, Otis Orion, 778 W. Decatur St.; office, 250 N. Water St.
 Steele, Pierre Abel, 404 W. Macon St.; office, 124 S. Water St.
 Strickler, Clarence A., 302 W. Main St.
 Strickling, Frank Ellsworth, 1033 W. Wood St.; office, 124 S. Water St.
 Talber, Wilmer Melvin, Wabash Employees' Hospital
 Tearnan, Clyde Hadrian, 510 Powers Lane; office, 102 N. Water St.
 Tearnan, Raymond Arthur, 104 N. Water St.
 Thompson, John Clair, 1531 W. Main St.; office, 250 N. Water St.
 Trimble, Volantus G., 716 W. Prairie Ave.; office, 124 S. Water St.
 Turley, Vigo Thos., 1157 Roger Ave.; office, 916 E. Wood St.
 Wente, Constantin Fredk., Decatur and Macon County Hospital
 West, Chas. Edward, 145 W. Cerro Gordo St.
 White, Justus Vanculen, 1048 W. Macon St.; office, 250 N. Water St.
 Wiley, Ralph Emerson, 250 W. Prairie Ave.; office, 124 S. Water St.
 Wilhelmy, Orville, 170 S. Dennis Ave.; office, 250 N. Water St.
 Wilkinson, Scott Jackson, 1533 W. Main St.; office, 250 N. Water St.
 Williamson, Ora Monroe, 228 Woodlawn Ave.; office, 124 S. Water St.
 Wilson, Uthie Ray, 354 N. 18th St.; office, 417 N. Water St.
 Wood, Chas. Martin, 432 S. Union St.; office, 104 N. Water St.
 Wood, Howard M.
 (See Mears, Mich.)
 Wood, Wilbur C., 605 W. Macon St.; office, 124 S. Water St.
 Wood, Wilbur Stuart, 279 Linden Pl.; office, 132 S. Water St.
 Woodward, Clayton E., 1070 W. William St.; office, 250 N. Water St.
 Yates, Fredk. Hyder, 8 Montgomery Pl.; office, 124 S. Water St.
 Yockey, Wm. M., 1006 W. Main St.; office, 540 E. Eldorado St.

DEERFIELD (LAKE)

Davis, Chas. Johnston
 Davis, Dorothy Alberta Sugden
 Metcalf, Walter Bradford
 (See Chicago)
 Sugden, Chas. Russell

De KALB (De KALB)

Anderson, Stoddard L.
 Badgley, John Anthony
 Brown, Mareva Dickerman
 Carter, Chas. D.
 Cheney, Carl L.
 Ellis, James Conrad
 Hagey, John B.
 Hopkins, Percy Isaiah
 Joost, Geo. Herman J.
 Rankin, James S.
 Rankin, James Tyler
 Smith, Clifford Eben
 Sundwall, Paul E.
 Telford, Elbridge Wright
 Wright, Harry Garfield

De LAND (PIATT)

Walker, Geo. Stanberry

DELAN (TAZEWELL)

Brink, Harlan W.
 Fockler, Geo. W.
 Kelchner, Eugene F.
 Woltmann, Katharine

De PUE (BUREAU)

Bates, Chas. Richard

De SOTO (JACKSON)

House, Oscar

DETROIT (PIKE)

Goodin, Geo. J.

DEWMAINE (WILLIAMSON)

Springs, Andrew Wilton (col.)

DIETERICH (EFFINGHAM)

Adams, Iduma Ormond
 Dimond, Harry Alfred

DIVERNON (SANGAMON)

Johnson, Simeon R.

DIXON (LEE)

Baird, Robt. L.
 Brown, Hilles Talley
 Chandler, Augustus Wellington
 Edwards, Howard Milton
 FitzJerrrell, Harry Bacon
 Garrison, Harriet E.
 Glatte, Zoltan M.
 Graff, Richard John
 Hart, Bruce David
 Keator, Louise Helmka (Polo); office,
 Dixon State Hospital
 Lehman, Saml. W.
 Lesage, Chas. Herman
 Lund, John Mayhue
 Marselus, Harry E., Dixon State Hos-
 pital
 McCoy, Henry James
 McNichol, Wm. Arthur
 Moore, Amos Foster
 Murphy, David Law
 Murphy, Edward S.
 Murray, Warren Garfield
 Parker, Wm. R.
 Powell, Curtis F.
 Radeff, Ivan Nicholoff
 Robbins, Chas. Albert
 Segner, Kenyon Bertel
 Stackhouse, Stirling Perry

Tarnavsky, Alexander
 Thompson, Willard Anthony
 Werren, John B.
 White, Marion L.

DONGOLA (UNION)

Davis, James Wesley
 Parker, Chas. A. C.
 Whitaker, Wm. J.

DONNELLSON

(MONTGOMERY)

Cary, Alvin Barnard

DONOVAN (IROQUOIS)

Hitchings, Robt. C.

DOWNERS GROVE (DuPAGE)

Bricker, Albert Edwin
 Duncombe, Keith Lionel
 Ehrler, Glenn Guild
 Gourley, Wm. Weir
 Gramm, Carl Theodor
 Nusbaum, Rayson Lavern
 (See Chicago)

Smith, Russell James
 Swanson, Gordon Rudolph
 Worsley, Edgar Field

DOWNS (McLEAN)

Williams, Edw. C.

DUNDEE (KANE)

Eichler, Theodore Fred
 Jones, Archie
 Maha, Frank Jos.
 Petersen, Heinrich F. W.
 Pistor, Ernest M.

DUNLAP (PEORIA)

Wilmot, Clauson Morrill

DUPO (ST. CLAIR)

Canaday, Robt. Newton
 Cooper, Nevada Costley
 Marxer, Barney Jos.

DUQUOIN (PERRY)

Adles, Max
 Anderson, Parry Alfred
 Brookings, Chas. M.
 Bulfer, Andrew Frederic
 Byrne, John Dewitt
 Carr, Martin C.
 Fischer, Geo. Gotthardt
 Gutridge, Geo. Harry
 Kelly, Thomas Bartlett
 Leigh, James T.
 Stevens, John Wayne

DURAND (WINNEBAGO)

Lins, Frank Jacob
 Roberts, Chas. Alexander

DWIGHT (LIVINGSTON)

Barr, Cyrus H.
 Brown, Fredk. Willard
 Chadbourne, Arthur Patterson, U. S.
 Vet. Hospital
 Cobb, David Hilliard, Veterans Admin-
 istration Hospital
 George, Raymond Horace, U. S. Vet.
 Hospital
 Joss, Edward Francis
 Maupin, Robt. Estill
 Neff, Lionel Hubert
 Oughton, James Henry
 Reynolds, Peter J.
 Tripper, Bert
 Wilson, Eva McClenahan

EARLVILLE (La SALLE)

Alyea, Thos. E.
 Goble, Ezra T.
 Lawry, Carl C., R. D. 4
 Pierce, Frederick E.
 Rayson, Edwin Hope
 Wiley, Frank A.

EAST ALTON (MADISON)

Baier, Augustus
 (See Alton)
 Obert, F. C. Wm.
 Quinn, Everette Roy
 Toalson, James J.

EAST DUBUQUE

(JO DAVIESS)

Lewis, Ulysses Simpson

EAST LYNN (VERMILION)

Vandoren, Raymond Fleming

EAST MOLINE

(ROCK ISLAND)

Barding, Lewis Danl., 825 20th Ave.;
 offices, 1519½ 7th St. and (1630 5th
 Ave., Moline)

Bollaert, Florens Emma, 1300 18th
 Ave.

Donahoo, Chas. Edward, 627 16th Ave.;
 office, 1519½ 7th St.

Fowler, John Henry, 2058 3d Ave.;
 office, 1509 7th St.

Gamburg, Leo, East Moline State Hos-
 pital

Hardinger, Ralph Wilbur, 416 16th
 Ave.; office, 1509½ 7th St.

Jacobs, Wilhelmina H., East Moline
 State Hospital

Johnson, Geo. Frederick, 840½ 15th
 Ave.

Johnston, James Paul, 2344 7th Ave.;
 office, 912½ 15th Ave.

Koff, Salmon Arthur, East Moline
 State Hospital

Leff, Abraham, East Moline State Hos-
 pital

Lery, Abraham, East Moline State Hos-
 pital

Mayos, Chas. Everett, East Moline
 State Hospital

Solomon, Sam, Jr., East Moline State
 Hospital

Soule, Earl A., 810 20th Ave.; office,
 841½ 15th Ave.

Tackett, Walton, East Moline State
 Hospital

Timmons, Peter Jos., East Moline State
 Hospital

Walden Walter
 Woodward, Jos. Theodore, East Moline
 State Hospital

EASTON (MASON)

Russell, Cleveland Clifford

EAST PEORIA (TAZEWELL)

Hopkins, Fred Grant
 Stiers, Fredk. Loren
 Sullivan, Edward Francis
 (See Peoria)

EAST ST. LOUIS (ST. CLAIR)

Alderson, Chas. Franklin, St. Mary's
 Hospital
 Aszmann, Arthur Max, 1926 N. 40th
 St.; office, 234 Collinsville Ave.
 Barker, Roy Frank, 1105 Cleveland
 Ave.; office, 234 Collinsville Ave.

Barrett, Wm. H. A. (col.); (4313 Enright St., St. Louis); office, 8 S. 4th St.

Beykirch, Jos. Gerhard, Jr., 561 Washington Pl.; office, 234 Collinsville Ave.

Boyd, Olin Blackburn, 1757 Ridge Ave.; office, 403a Collinsville Ave.

Boyd, Tullie Van (Signal Hill); office, 234 Collinsville Ave.

Boyne, Walter Wm., 1663 N. 40th St.; office, 417 Missouri Ave.

Brennan, Michael Earl, 3143 Bond Ave.; office, 513a Missouri Ave.

Bromley, Cerilda Niswonger, 711 N. 11th St.

Brooks, Chas. Newton, 410 Missouri Ave.

Burdick, Geo. Enos, U. S. Vet. Bureau.

Cables, Henry Albert, 529 Washington Pl.; office, 331 Missouri Ave.

Campbell, Richard L., 1100 Summit Ave.; office, 314 Missouri Ave.

Crotty, Wm. John, 641 Vogel Pl.; office, 417 Missouri Ave.

Culbertson, Ora J., 600 Vogel Pl.; office, 234 Collinsville Ave.

De Haan, Adrian John (8300 W. Main St., Belleville); office, 8900 State St.

Donahue, James Jos., 512 Brighton Pl.; office, 327 Missouri Ave.

Doyle, Martin R., 304 N. 10th St.

Ebersole, Sol D., 1402 Summit Ave.; office, 401 Missouri Ave.

Eisele, Chas. Edward, 3806 Caseyville Ave.; office, 300 S. 4th St.

Ellis, Robt. Bertram, 818 N. 24th St.; office, 327 Missouri Ave.

Etherton, John Carroll, 3820 Linden St.; office, 233a Collinsville Ave.

Eubanks, John Edward, Jr., 1433a E. Broadway

Folck, John Kieffer, Christian Welfare Hospital

Foulon, Irenaeus Lister, 608 Washington Pl.; office, 327 Missouri Ave.

Fulgham, John Henry, 515 Washington St.

Green, LaFayette, 3028 Lincoln Ave.; office, 417 Missouri Ave.

Griffith, Wm. Anthony, 1402 Summit Ave.; office, 327 Missouri Ave.

Gunn, Fredk. Henry, 511 Washington Pl.; office, 513a Missouri Ave.

Hanson, Wm. Ludwig, Lindorf Dr.; office, 327 Missouri Ave.

Harney, Louis G., 417 Missouri Ave.

Henry, James Clayton, 3252 Waverly Ave.; office, 234 Collinsville Ave.

Hervey, Wm. Eugene, 1301 St. Clair Ave.

Higgs, John I., 2713 Bond Ave.

Hill, Chas. Edgar, 442 Brighton Pl.; office, 234 Collinsville Ave.

Holten, Edmund Herman, 1621 N. 42d St.; office, 234 Collinsville Ave.

Housh, Ato C., 552 N. 14th St.; office, 417 Missouri Ave.

Hulick, Geo. Oscar, 1533 N. 44th St.; office, 234 Collinsville Ave.

Hunter, Thos. Gerald (col.), 1742 Market Ave.

Hurd, Henry Hill, 1000 Pennsylvania Ave.; office, 431 Missouri Ave.

Isom, Wm. Claiborne, 217 S. Main St.; office, 320a Missouri Ave.

Kane, Clifford Cyrus, 8521 State St.

Killene, Harry Franklin, 1744 N. 23d St.; office, 417 Missouri Ave.

King, Isaiah Horace (col.), 1525 Market Ave.

Kirsch, Francis, 1538 N. 45th St.; office, 303 Collinsville Ave.

Klug, Oscar C., 607 N. 33d St.; office, 417 Missouri Ave.

Knapp, Howard Clay, 705 N. 24th St.; office, 234 Collinsville Ave.

Knewitz, Otto Wm., 1307 N. 13th St.; office, 541 Collinsville Ave.

Le Grand, Danl. W., 463 N. 25th St.

Leon, Fernando, 2757 N. 42d St.

Lippert, John, 1556 St. Clair Ave.

Little, Homer M., 2200 State St.; office, 303 Collinsville Ave.

Little, Finis Coleman, 332 E. Broadway

Little, Rolla E., 1623 State St.; office, 303 Collinsville Ave.

Ludwigs, Gustav Anton John, 921 St. Louis Ave.

Madden, Leo Lawrence, 734 Vogel Pl.; office, 403a Collinsville Ave.

Magarian, Leon, 2525 Caseyville Ave.; office, 1701 Broadway

McCann, Oria Marcellus, 1751 N. 38th St.; office, 234 Collinsville Ave.

McCracken, Robt. X., Granvue Dr.; office, 417 Missouri Ave.

McNary, Wilbert Francis, 424 N. 8th St.; office, 403a Collinsville

McQuillan, Albert Baptiste, Country Club Dr.; office, 327 Missouri

McQuillan, Eugene Albert (Signal Hill); office, 405 Missouri Ave.

Meek, Geo. Chester, St. Mary's Hospital

Menzie, Clifford Gordon (St. Clair Country Club, Belleville); office, 417 Missouri Ave.

O'Brien, Wm. Martin, St. Mary's Hospital

O'Malley, John Jos., St. Mary's Hospital

Rendleman, James W., 553 N. 14th St.; office, 327 Missouri Ave.

Rives, Albert Edgar, 554 N. 18th St.; office, 417 Missouri Ave.

Ryan, Lawrence Augustus, 417 Missouri Ave.

Sharp, Morris Louis, St. Mary's Hospital

Siegel, Vivien Peers, 401a Collinsville Ave.

Skaggs, Chas. Sylvester, 1725 College Ave.; office, 513 Missouri Ave.

Skinner, Geo. Archibald, 801 N. 8th St.

Smith, Harvey S., 2311 Lincoln Ave.; office, 401a Collinsville Ave.

Smith, Henry Devon, 713 St. Louis Ave.

Soucy, John Clovis, 3325 Market St.

Spannagel, Wm. Christian (Signal Hill); office, 137a Collinsville

Spitze, Edw. Christian, 3800 Lincoln Ave.; office, 234 Collinsville

St. John, Dewey, Christian Welfare Hospital

Stanton, Harley Gibson, 755a Collinsville Ave.; office, 1818 N. 40th

Stanton, Roy Francis, 1127 Baugh Ave.

Stines, Thomas Irving, 2310 State St.

Tanzer, Harry Hymen, 614 40th St.; office, 40th St. and Waverly Ave.

Tharp, Royal, 1530 N. 45th St.; office, 327 Missouri Ave.

Thompson, Eugene, 1516 St. Louis Ave.

Triolo, Anthony, St. Mary's Hospital

Twitchell, Robt. A., 611 N. 9th St.; office, 338 Missouri Ave.

Vonnahme, Conrad Benedict, 505 N. 16th St.; office, 228a Collinsville

Voris, Henry McMunn, 1615 N. 45th St.; office, 502a Penn Ave.

Wallace, Thos. Leon, 1436a Piggott Ave.

Waters, Orley Morton, 700 N. 73d St.; office, 225 Collinsville Ave.

Wedel, Louis Emil, 604 Washington Pl.; office, 112a St. Clair Ave.

Wilhelmj, Chas. F. W. (Signal Hill), office, 234 Collinsville Ave.

Wilhelmj, Walter Chas., 518 Missouri Ave.; office, 234 Collinsville

Winning, Chas. Crain, 763 Vogel Pl.; office, 501a Missouri Ave.

Young, John Smith
(See St. Louis)

EDGEWOOD (EFFINGHAM)

Allan, John Gillison

EDGINGTON (R. D. Taylor Ridge) (ROCK ISLAND)

Mosher, Arthur Hall

EDINBURG (CHRISTIAN)

Schott, Wade Hampton

Stokes, Campbell A.

EDWARDSVILLE (MADISON)

Barnsback, Roy Smith

Delicate, Henry Brinkman

Delicate, Wm. Ernest

Ferguson, Edw. C.

Hirsch, Jos. Adams

Monroe, Duncan Danl.

Noggle, Perry L.

(See Granite City)

Oliver Adam Hale

Sutter, John Ritter

Tietze, Herman Christian

Wahl, Eugene, Jr.

Wharff, Howard Eliphalet

Williams, Walter James (Col.)

EFFINGHAM (EFFINGHAM)

Buckmaster, Frank

Burkhardt, Chas. Frederick

Damron, Elbert Leroy

Doty, Chas. M.

Goodell, Frank Wise

Henry, Sylvester Francis

Holman, Clarence C.

Kershner, Jos. Lemuel

Long, Henry August

Reuther, Theodore Ferdinand

Taphorn, D. Henry

Wettstein, John Chas. Robt.

ELBURN (KANE)

Calhoun, Chambers D.

Gates, Wm. S.

Sears, Kenneth Marshall

Taylor, Richard C.

EL DARA (PIKE)

Henry, Gilbert H.

ELDORADO (SALINE)

Beltz, Andrew Hugh

Braun, Wm. E.

Ferrell, Grover C.

Ferrell, John Vernon

Gregory, John H.

Hick, John Carlos
 Johnson, Frank
 Johnson, Wm. T.
 Martin, Cecil Lawrence
 Pearce, Franklin Benjamin
 Skelton, Neva

ELGIN (KANE)

Abbott, Gordon Wells, 24 S. Liberty St.; office, 165 Milwaukee St.
 Allerton, Roy Perry, 5 Douglas Ave.
 Azar, Alexander James, 750 S. State St.
 Bishop, Wm. H., 18 Hamilton Ave.
 Black, Wm. Letcher, Elgin State Hospital
 Bridge, Katherine Pleavin, 429 E. Chicago St.
 Bridge, Wm. C., 429 E. Chicago St.
 Brown, Wm. Simon, 402 N. Spring St.; office, 164 Division St.
 Campbell, Peter M., 252 Ann St.; office, 164 DuPage St.
 Carpenter, Morgan Gilmore, 402 River Bluff Rd.; office, 165 E. Chicago St.
 Carriel, Henry B., 750 S. State St.
 Carriel, Joy Ricketts, 750 S. State St.
 Chrysanthacopoulos, James
 (See Chicago)
 Collins, Nathan Perry, 337 Jewett St.; office, 161 E. Chicago St.
 Cox, Elwood Hunter, Elgin State Hospital
 Dewey, Alvin P., 117 N. Liberty St.
 Dowell, Raymond Franklin, 864 Highland Ave.; office, 212 Division St.
 Dueringer, Henry Wm., 227 Hill St.; office, 17 Douglas Ave.
 Dunn, Edward Harkless, 557 E. Chicago St.; office, 8 N. Spring St.
 Egbert, James K., 398 Chicago St.
 Falstein, Eugene Isadore, Elgin State Hospital
 Finkelman, Isidore, Elgin State Hospital
 Gabby, Saml. Lee, 956 South St.; office, 102 N. Spring St.
 Gregg, Wm. Earl, 1039 Logan Ave.; office, 8 N. Spring St.
 Griffith, Frank Wm., 557 E. Chicago St.; office, 8 N. Spring St.
 Haffron, Danl. (3911 W. 16th St., Chicago); office, 750 S. State St.
 Harcourt, Roy Adolphus, 102 Spring St.
 Higgins, Alton J., 514 Spring St.; office, 5 Douglas Ave.
 Howell, Sally Yinst, 314 E. Chicago St.; office, 5 Douglas Ave.
 Howell, James A. Sullivan, 314 E. Chicago St.; office, 5 Douglas Ave.
 Hubrig, Martin Henry, 31 N. Worth Ave.; office, 165 Milwaukee St.
 Hughes, Lawrence Jesse, 950 Highland Ave.; office, 163 Milwaukee St.
 Hurley, Douglas Chester, 70 S. Chapel St.; office, 171 E. Chicago St.
 Jacobs, Milton
 (See Chicago)
 Jacobson, Jacob Robt., Elgin State Hospital
 Kessler, Geo. Brinton, 395 Park St.; office, 8 N. Spring St.
 Knight, Howard Talcott, 216 Hamilton Ave.; office, 23 Douglas Ave.
 Kocher, Olive Frances Hughes, 559 Barrett St.; office, 16 Spring St.
 Krakowski, Julian Peter, 658 Slade

Langhorst, Arthur Louis, 1020 Douglas Ave.; office, 164 Division St.
 Langhorst, Fredk. Henry, 600 Chicago St.; office, 164 Division St.
 Le Blanc, Florimond Jos., 384 S. Liberty Drive; office, 16 S. Spring
 Lescher, Edwin Russell, 1014 N. Spring St.; office, 164 Division St.
 Lisor, Graham MacAllister, 364 N. Spring St.; office, 100 E. Chicago St.
 Mann, Alban L., 392 E. Chicago St.; office, City Hall
 Manougian, Krikore Manoug, 1024 N. Spring St.; office, 164 Division St.
 McCornack, Alexander Edwin, 265 Hamilton Ave.; office, 164 Division St.
 McIntosh, Jesse Harrison, 750 S. State St.
 Milligan, Jay McDonald, 354 Jefferson Ave.; office, 102 N. Spring St.
 Mulliken, Oscar Dale, 832 N. Spring St.; office, 5 Douglas Ave.
 Nerancy, John Taphy, 750 S. State St.
 Pelton, Ora L., 214 S. State St.; office, 102 N. Spring St.
 Pillinger, Herbert Henry, 5 Slade Ave.; office, 14 Douglas Ave.
 Putnam, Lynn J., 6 S. Gifford St.; office, 102 N. Spring St.
 Read, Chas. F., Elgin State Hospital
 Reagan, Sheldon Wilson, Elgin State Hospital
 Schiller, Maurice Aaron, Elgin State Hospital
 Schmidt, Henry Geo. G., 116 S. Chapel St.; office, 8 N. Spring St.
 Schneider, Geo. J., 56 N. Channing St.; office, 163 Chicago St.
 Schroeder, Mary Gritzer, 750 State St.
 Schurmeier, Fredk. Conrad, 849 Douglas Ave.; office, 164 Division St.
 Shapiro, Louis Bernard, Elgin State Hospital
 Sharp, Chas. E., 685 E. Chicago St.; office, 731 Linden Ave.
 Simon, Abraham, Elgin State Hospital
 Steinberg, David Louis, 750 S. State St.
 Stephens, Wm. Mary, Elgin State Hospital
 Tapper, John G., 116 College St.
 Tobin, John R., 540 South St.; office, 165 Milwaukee St.
 Townner, Francis Robinson, 212 Jefferson St.; office, 102 N. Spring St.
 Voight, Benj. John, 716 N. Spring St.; office, 8 Douglas Ave.
 Ward, Edna Mae, 750 S. State St.
 Weirick, Geo. Albert, 162 S. State St.
 Wenner, Henry Lee, Jr., 22 N. Liberty St.; office, 102 N. Spring St.
 West, Hugh Hamilton, 56 N. Liberty St.; office, 164 DuPage St.
 Wick, Saml., 750 S. State St.
 Wilgus, Sidney D.
 (See Rockford)
 Wiltrakis, Geo. Augustine (4330 Washington Blvd., Chicago); office, Elgin State Hospital
 Wittman, Anthony G., Elgin State Hospital
 Zapolsky, Irving, Elgin State Hospital

ELIZABETH (JO DAVIESS)

Wiley, Elvin James

ELIZABETHTOWN (HARDIN)

Paris, James Lenard, Sr.; also office (R. D. 1, Karbers Ridge)

ELKVILLE (JACKSON)

Chamness, Clyde James
 Harrell, Wm. J.

ELLSWORTH (McLEAN)

Trigger, Harry W.

ELMHURST (Du PAGE)

Abt, A. F. Hugo, 524 S. Hawthorne Ave.
 Allen, Robt. A.
 Berkey, Harvey Allen
 (See Chicago)
 Cody, Michael Milton, 204 W. St. Charles Rd.; office, 105 S. York St.
 Crane, Milo A.
 Elworthy, Robt. Wm., 164 S. York St.
 Haney, Irl Stuart
 (See Chicago)
 Harrison, Wallace Kasson
 (See Chicago)
 Hills, Lester Harper
 Holtz, John Franklin, 135 Prospect Ave.
 Horick, Edward Jos., 252 E. 2d St.; office, 101 Addison Ave.
 Johnson, Richard Geo.
 Langhorst, Henry Frederick
 Leahy, Frank David, 502 S. Fairview Ave.; office, 532 S. York St.
 Marquardt, Edw. Wm.
 Mathis, Alvin Leroy, 124 Avon Rd.; office, 107 W. 1st St.
 Medley, John W., 177 S. York St.
 Scheuerman, Chas. S.
 (See Chicago)
 Schultz, Harry Louis, 627 Prospect St.; office, 105 S. York St.
 Smith, Lorin W., 228 Chandler St.
 Tilleman, John Francis, 370 Prospect St.; office, 101 Addison St.
 Uthoff, Carl Jos.
 (See Oak Park)
 Watson, Ernest Starr, 207 W. Fremont St.; office, 105 S. York St.

ELMIRA (R. D. Toulon)

(STARK)

Linker, Luther M.

ELMWOOD (PEORIA)

Morton, David Holmes
 Varney, Franklin Thos.
 Zoll, Edw. C.

EL PASO (WOODFORD)

Gordon, Robt. Earl
 McNertney, Frank Daniel
 McReynolds, Alva Edgar

ELWOOD (WILL)

Gilbert, Alson R.

EMDEN (LOGAN)

Barringer, Bert Montrose

EMINGTON (LIVINGSTON)

Richardson, Bertram Arthur

ENFIELD (WHITE)

Artin, Arsen Sissak
 Staley, Clinton B.

EQUALITY (GALLATIN)

Bourland, Isaac Newton
 Womack, James A.

ERIE (WHITESIDE)

Poster, Adin Henry
La Rue, Roht. E.

EUREKA (WOODFORD)

Madison, Wm. Davis
Nickel, Frank Wm.

EVANSVILLE (RANDOLPH)

Beattie, James Glen
Finley, Robt. Linson

EWING (FRANKLIN)

Phillips, John E.

FAIRBURY (LIVINGSTON)

Brewer, Danl.
Langstaff, James Hartzell
Law, Edw. Fredk.
Marshall, Wm. Allen
Thatcher, Allen Horatio

FAIRFIELD (WAYNE)

Blakely, James Thos.
Boggs, John Dalgus
Hancock, Walter Addison
Harlan, James D.
Hilliard, Thos. J.
McDonald, Geo. Albert
Stonemetz, Guy N.
Young, Leslie Winters

FAIRMONT (VERMILION)

Leitzbach, Augustus John

FAIRVIEW (FULTON)

Crouch, Warner Latta
Parks, Doan
Wasson, Redone Edgar

FARINA (FAYETTE)

Holson, James Butler
Phillips, Fredk. Monroe

FARMER CITY (DEWITT)

Hull, Chas. Wilbur
Nowlin, Owen Wendell Emen
Nowlin, Wilfred Jonathan
Ziegler, John H.

FARMERSVILLE

(MONTGOMERY)

Hayes, Karl Lowell

FARMINGTON (FULTON)

Dimmitt, Eghert King
Grimm, Ralph Pool
Plumer, Thos. Robt.
(See Trivoli)

FERRIS (HANCOCK)

Kelly, Blair

FIATT (FULTON)

Gray, Wm. Bahington

FIELDON (JERSEY)

Brewster, Bert Marion

FILLMORE (MONTGOMERY)

Fish, Wm. Otto

FINDLAY (SHELBY)

Mauzey, Geo. W.

FISHER (CHAMPAIGN)

Donovan, Saml. D.
Sale, Leslie O.

FITHIAN (VERMILION)

Dietrich, Edwin Fredk.

FLANAGAN (LIVINGSTON)

Wilcox, Earl Victor
Zinn, Julian W.

FLAT ROCK (CRAWFORD)

Hardin, Chas. E.
Highsmith, Luther Byrl

FLORA (CLAY)

Bowman, Norton W.
Estes, Clinton Jos.
Fehrenbacher, Harvey Del
Finch, Rollae Danl.
Hutchens, Lucius Lester
Thomas, Wm. Allen

FOREST CITY (MASON)

Blankenship, Clifford R.

FORREST (LIVINGSTON)

Barnhizer, Jay G.
Hamilton, Otis P.

FORRESTON (OGLE)

Akins, Jesse C.
Overfield, Walter W.
Schoon, Theodore Geo.

FORSYTH (MACON)

Lindsey, Lucien Nelson

FORT SHERIDAN (LAKE)

Blair, Lyman Curtis, C. C. Corps
Dibble, John, Station Hospital
Emerson, Gouverneur Vincent, Maj.
M.C., U.S.A.

Hayes, Paul, 1st Lieut., M.C., U.S.A.
Hitchens, Arthur Parker, Sixth Corps
Area Lahoratory

McClintic, Brown Shirk, Maj. M.C.,
U.S.A.

McDowell, James Rhea, Capt. M.C.,
U.S.A.

Tarleton, Leeson Oren, Maj. M.C.
U.S.A.

Tefft, Wm. H., Col. M.C., U.S.A.

FOUNTAIN GREEN

(HANCOCK)

Bouseman, Albert Wm.

FOX LAKE (LAKE)

Rollins, Francis Theodore

FRANKFORT (WILL)

Hedges, Walter Vincent

FRANKLIN (MORGAN)

Henderson, Marion D.
Metcalf, Frederick H.

FRANKLIN GROVE (LEE)

Banker, Frank Marvin

FREEBURG (ST. CLAIR)

Blanchard, Chas. Willard
Dewein, Edward Geo., Jr.
Fox, Fredk. Biggers
Hertel, Henry

Tegtmeier, Chas. Louis

FREEPORT (STEPHENSON)

Ascher, John Alfred, 424 W. Stephen-
son St.; office, 25½ E. Stephenson St.
Best, Chas. Lorton, 1545 W. Stephen-
son St.; office, 3½ E. Stephenson St.
Bokhof, David Henry, 518 W. Galena
Ave.

Buchanan, James Ned, 123 N. Cherry
Ave.; office, 4½ E. Stephenson St.
Burns, Roht. J., 809 S. Liberty St.;
office, 4½ E. Stephenson St.

Clark, John Sheldon, 1006 W. Stephen-
son St.; office, 27 E. Stephenson St.
Diestelmeier, Edward A., 124 N. Har-

lem Ave.; office, 223 W. Stephenson
St.

Grant, John Joseph, 1525 W. Stephen-
son St.; office, 10 E. Stephenson St.
Harlan, Noah Roht., 1238 W. Stephen-
son St.; office, 6 W. Main St.

Hartfield, Ernest Monroe, 1060 W. Ste-
phenson St.; office, 12½ E. Stephen-
son St.

Hewetson, Sara Elizabeth, 868 W. Ste-
phenson St.; office, 4½ E. Stephen-
son St.

Holke, Theophil J., 1208 W. Stephen-
son St.; office, 30 W. Stephenson St.
Hutchins, Linda Krape, 638 W. Lincoln
Blvd.

Karcher, Wm. L., 1011 W. Stephenson
St.; office, 3 W. Stephenson St.

Leavy, Cuthbert Jos., 703 W. Stephen-
son St.; office, 4½ E St.

Morrison, Hugh Ernest, 115 Foley St.;
office, 103 W. Stephenson St.

Motsinger, Ernest Leroy, 1236 S. Maple
Ave.; office, 11½ W. Stephenson St.

Peck, Wm. Buckley, 1302 S. Oak Ave.;
office, 12½ E. Stephenson St.

Pettepiece, Thomas Arthur, 1039 W.
Stephenson St.; office, 222½ W. Ste-
phenson St.

Phillips, Nelson Chancellor, 926 W. Ste-
phenson St.; office, 27 E. Stephenson
St.

Poling, James Alonzo, 1439 W. Ste-
phenson St.; office, 202 S. Chicago
Ave.

Rideout, Wm. Edward, 1244 W. Ste-
phenson St.; office, 27 E. Stephen-
son St.

Rieger, Karl Benedict, 424 S. West
Ave.; office, 2 E. Main St.

Rosenstiel, Mary L., 6 N. Cherry Ave.;
office, 4 N. Cherry Ave.

Shelly, Emanuel Ely, R. D. 5; office,
229 W. Main St.

Sikes, Edward Warren, 1414 W. Ste-
phenson St.; office, 3½ E. Stephen-
son St.

Snyder, Karl F., La Hacienda; office,
27 E. Stephenson St.

Stickle, Howard John, 1043 W. Lin-
coln Blvd.; office, 103 W. Stephen-
son St.

Voigt, Louis George, 415 E. Pleasant
St.; office, 27 E. Stephenson St.

Waggoner, Thos. T., 308 W. Main St.
White, Roht. M., 427 S. Carroll Ave.

Zipf, Chas. Bogardus, 1018 W. Douglas
St.; office, 27 E. Stephenson St.

FULTON (WHITESIDE)

Durkee, William Henry
Heusinkveld, Henry John
Van de Sand, Gerard F.
Ward, David W.

GALATIA (SALINE)

Empson, M. D.
Garrison, Auda
Grattan, Wm. T. H.

GALENA (JO DAVIESS)

Bench, Edward M.
Dolamore, Jos. F.
Fleege, Francis Henry
Logan, Ray Evan
Schiele, Wm. Christopher

GALESBURG (KNOX)

Augerson, Clara Klopsch, 1633 Bateman St.
 Bagley, Henry Patterson, 1549 N. Prairie St.; office, 306 E. Main St.
 Baird, Benj. David, 1287 N. Broad St.; office, 64 S. Prairie St.
 Birmingham, Thomas F., 591 N. Prairie St.; office, 250 E. Main St.
 Bower, Crosiar Geo., 1264 N. Kellogg St.; office, 306 E. Main St.
 Bower, Geo. Stuart, 515 N. Chambers St.; office, 306 E. Main St.
 Bryant, John Howard, 451 N. Cherry St.; office, 306 E. Main St.
 Corhin, John Francis, 135 W. Tompkins St.; office, 152 E. Main St.
 Dickinson, Francis Chaffee, 411 N. Prairie St.; office, 64 S. Prairie St.
 Eastman, Herhert Clinton, 1198 N. Prairie St.; office, 308 E. Main St.
 Fey, Amos, 250 Maple Ave.; office, 64 S. Prairie St.
 Finley, Clyde Alexander, 1109 N. Prairie St.; office, 250 E. Main St.
 Franing, Edward Chas., 1560 N. Cherry St.; office, 308 E. Main St.
 Graham, Howard Edwin, 347 S. West St.; office, 19 E. Main St.
 Greenman, John S., 1489 E. Knox St.; office, 64 S. Prairie St.
 Griffith, Mose Simpson, 1168 Florence Ave.; office, 250 E. Main St.
 Grogan, Edwin Benedict, 247 W. Mary St.; office, 250 E. Main St.
 Gunning, Roht. Edward Lee, 219 Walnut Ave.; office, 64 S. Prairie St.
 Hall, Fredk. Guy, 624 E. Losey St.; office, 306 E. Main St.
 Hill, Columhus C., 429 Johnson St.; office, 152 E. Main St.
 Hyslop, Clayton James, 889 N. Broad St.; office, 250 E. Main St.
 Johnson, Carl G., 220 N. Chambers St.; office, 306 E. Main St.
 Johnson, Nicholas Stanislaus, 820 Florence Ave.; office, 311 E. Main St.
 Klein, Grover Cleveland, 1563 N. Cherry St.; office, 311 E. Main St.
 Kunz, Frank Oliver, 71 N. Chambers St.; office, Chicago, Burlington and Quincy Railroad Depot
 Maley, Geo. Elzear, 390 S. West St.; office, 139 E. Main St.
 Maley, Wm. H., 422 N. Cherry St.; office, 44 N. Cherry St.
 Matheny, Ralph C., 1030 N. Broad St.; office, 308 E. Main St.
 McClanahan, Benj. Vaughn, 969 N. Prairie St.; office, 250 E. Main St.
 Murchison, John C., 450 N. Kellogg St.; office, 302 E. Main St.
 Nash, Edwin Nelson, 750 N. Academy St.; office, 250 E. Main St.
 Pittman, Sanl. M., 86 Phillips St.
 Pollock, Arthur David, 971 N. Cherry St.; office, 250 E. Main St.
 Quaife, Clarence Edward, 1008 N. Cherry St.; office, 250 E. Main St.
 Redington, James Crescent, 1072 Jefferson St.; office, 304 E. Main St.
 Rice, Delia M., 1030 N. Broad St.
 Ripley, Clarence Bingham, 809 N. Academy St.; office, 250 E. Main St.
 Seifert, Edward Herman, 182 N. Prairie St.; office, 249 E. Main St.

Stewart, Alexander Fraser, Galesburg Club
 Stotts, Arthur Franklin, 1129 N. Prairie St.; office, 308 E. Main St.
 Tate, Louis Neill, 474 N. Academy St.; office, 306 E. Main St.
 Toler, John C., 427 N. Prairie St.
 Wilhur, Fred M., 1431 N. Prairie St.; office, 250 E. Main St.
 Williamson, Wm. S., 450 N. Kellogg St.; office, 18 E. Main St.
 Wing, Edgar D., 450 N. Kellogg St.; office, 152 E. Main St.
 Winters, Michael Henry, 511 N. Cherry St.; office, 250 E. Main St.
 Woods, Silas Samuel (col.), 158 S. Prairie St.
 Zessin, Elmer Theo. Paul, 37 E. Grove St.; office, Chicago, Burlington and Quincy Building

GALVA (HENRY)

Alford, John Merlin
 Alford, Shirley Foote
 Huston, Irvin Everett
 Kinsey, Ben W.
 Stewart, Roht. Hardy
 Waterous, Harry Willard

GARDEN PRAIRIE (BOONE)

Hartman, Minor Leroy

GARDNER (GRUNDY)

Allison, Chas. D.
 Fuller, Erlan G.

GARRETT (DOUGLAS)

Colyer, Welhy Adams

GAYS (MOULTRIE)

Hardinger, John Daniel

GEFF (WAYNE)

Hilliard, David Alex

GENESEO (HENRY)

Doering, Peter Jos.
 Ellingsworth, Jos. Hector
 Murphy, John Harvey
 Parsons, Arthur
 Smith, Roht. Harlie
 Spencer, Wilhur F.
 Young, Chas. S.
 Young, Worling Rivenburg

GENEVA (KANE)

Carpenter, Ralph Waldo
 Gray, John Wilson
 Harris, Herbert
 Hetherington, Robt. Clarke
 Knapp, Roht. Dana
 Knepper, Paul Alhert, Community Hospital
 Marsteller, Francis M.
 Scott, Raymond G.
 Wadsworth, Henry P.
 (See Chicago)
 Weaver, Isahel M.
 (See Aurora)

GENOA (De KALB)

Baker, Wm. Evan
 Burton, Edgar Curtis
 Byers, Emery Marcus

GEORGETOWN (VERMILION)

Black, Samuel Milton
 Brookshier, Martin L.
 Fletcher, Marcus Saml.

GERMANTOWN (CLINTON)

Bauer, John A.

Meirink, Bernard John
 Mollet, Emil
 Wallace, Roht. Stephen

GIBSON CITY (FORD)

Cunningham, Jos. Swisher
 Lane, Roht. Nelson
 Potts, Albert LeRoy
 Wash, Geo. A.

GIFFORD (CHAMPAIGN)

Axtell, Earl S.

GILLESPIE (MACOUPIN)

Engh, Helmer Arthur
 English, John Nelson
 Hohson, Edwin Richard Yates
 O'Connell, Patrick Benedick
 Sullivan, Edward Francis
 Thomas, Marvel

GILMAN (IROQUOIS)

Buckner, Roy Alvan
 Fordyce, Alexander Wm.
 Gainer, John Fisher

GIRARD (MACOUPIN)

Bullard, Ernest Edwin
 Finney, Howard Alhert
 Hill, Green Ewing
 Riffey, James Henry

GLADSTONE (HENDERSON)

LoVene, Arthur Wilhelm

GLASFORD (PEORIA)

Yates, Geo. Spurgeon Balshazaar

GLEN CARBON (MADISON)

Schaeffer, Geo. John

GLEN ELLYN (DUPAGE)

Berwanger, Willard Jerome
 Camp, Walter John Richard (See Chicago)
 Fellows, Fredk. Brown (See Chicago)
 Hiatt, Kenneth Nelson
 Kay, Ahhott Elliott
 Kettlestrings, Fred Willis (See Oak Park)
 Morrow, John Calvin Weir
 Pugh, Cloyd Long
 St. Benno, Richard (See Chicago)
 St. Benno, Richard W. (See Chicago)
 Schiele, Richard Fredk.
 Washburne, Geo. F.
 Watson, Allen Smith

GODFREY (MADISON)

Smith, Groves Blake

GOLCONDA (POPE)

Barger, Lewis S.
 Clark, Thos. H.
 Dixon, James W.
 Dusch, Lawrence Dale

GOLDEN (ADAMS)

Ross, John Fredk.

GOODFIELD (WOODFORD)

Viers, John Wesley

GOOD HOPE (McDONOUGH)

Bishop, Arthur M.

GOREVILLE (JOHNSON)

Thornton, Alfonso D.

GORHAM (JACKSON)

Crandle, Eugene

GRAFTON (JERSEY)

Baecht, Frank Chas.
 Goitz, Arthur B.

GRAND RIDGE (LASALLE)

Everhart, Arley Glenn
Ives, Augustus

GRAND TOWER (JACKSON)

Baysinger, Millard W.
Gardiner, Chas. D.

GRANITE CITY (MADISON)

Arnovitz, Emanuel Morris, 2501 Delmar Ave.; office, 1916 Delmar Ave.
Binney, Robt. Webster, 19th and D Sts.
Dale, Philip Marshall, 1919 Cleveland Blvd.; office, 1322 Niederinghaus Ave.
Darnier, Leslie Dorse, 2561 Cleveland Blvd.; office, 1415 Niederinghaus Ave.

Droege, Edward Henry, 2212 Madison St.; office, 1414, 21st St.

Fitzgerald, James Jos., 2700 Cleveland Blvd.; office, 1908 Edison Ave.

Grayson, Wm. Friar, 1334, 19th St.
Halyama, Gabriel Eugene, 1243a Niederinghaus Ave.

Hamm, Malfred, 21st and State Sts.
Haven, Wm. Walter, 2040 G. St.

Hoernschenmeyer, Jos. Louis, 1332a, 19th St.

Johnson, Frank Oliver, 1938 C St.; office, 1312a Niederinghaus Ave.

Kaylor, Orville Kenneth (See St. Louis)

Krumsiek, Wm. E., 2011 D. St.

Luster, Robt. Dayton, 2337 Cleveland Blvd.; office, 1924 Edison Ave.

Metro, Michael Leo, 2000 E. 19th St.

Noggle, Perry L., (Edwardsville); office, 1635 Niederinghaus Ave.

Phillips, John Henry, 1916 Delmar St.

Purnell, Ernest Alfred, 2509 State St.

Reuss, Harry Pierce, 2257 Cleveland Blvd.; office, 1365a Niederinghaus Ave.

Schermer, Jacob, 2457 State St.; office, 1415 Niederinghaus Ave.

Schreifels, Leonard, 2462 Delmar Ave.; office, 1314a Niederinghaus Ave.

Schroeder, Hugo Christian Herman, 1927 Edison Ave.

Theis, Edward Herman, 2823 Grand Ave.; office, 1365 Niederinghaus Ave.

GRANT PARK (KANKAKEE)

Van Horne, Geo. W.

GRANVILLE (PUTNAM)

Hartman, Perry Vernon
Smart, Clarence Earl

GRAYSLAKE (LAKE)

Anderson, Stanley Danl.
Grim, Ulysses J. (See Chicago)
Pacella, Michelangelo, also office (809 W. Madison St., Chicago)
Struthers, Herbert Rankin

GRAYVILLE (WHITE)

Allison, Hugh Quitman
Bass, Herschel Logan
Green, Ernest A.
Keagy, Cyrus S.

GREAT LAKES (WAUKEGAN P. O.) (LAKE)

Babione, Robt. Wm., Naval Hospital
Belding, Leland James, Naval Hospital
Blew, Clarence Lloyd, Naval Hospital
Boland, Micajah, Naval Training Station

Bradbury, Warren Edwin, Naval Hospital

Dickson, James Gillespie, Naval Hospital

Donelson, Martin, Naval Hospital

Douthat, Robt. Cunningham, Naval Hospital

Edmisten, Loyd Lewis, Naval Hospital

Espach, Walter Clark, Naval Hospital

Harbour, Thos. Quincy, Naval Hospital

Hudson, Millard Fillmore, Naval Hospital

James, Walter Franklyn, Naval Hospital

Johnson, Lewis Wells, Naval Hospital

Judy, Arthur Sinclair, Naval Hospital

Keaney, Felix Patrick, Naval Hospital

Kindleberger, Chas. Poor, Naval Hospital

Leamer, Bruce Vinton, Naval Hospital

Marchand, Decoy, Naval Hospital

Millsbaugh, Judson Albert, Naval Hospital

Owen, John Paul, Naval Hospital

Perez, Jose Antonio, Naval Hospital

Raison, Thos. Wrightson, Naval Hospital

Shadday, Alva Adrian, Naval Hospital

Smith, Oliver Augustus, Naval Hospital

Stelter, Emil Jos., Naval Training Station

Storey, Clifford Fulton, Naval Hospital

Vinnedge, Kenneth Houston, Naval Hospital

Weber, Henry Chas., Naval Hospital

Weinert, Theophilus Franklin, Naval Training Station

Willcuts, Morton Douglas, Naval Hospital

Wood, John Paul, Naval Hospital

GREENFIELD (GREENE)

Bulger, Chas. Oliver

Gause, Orval J.

GREENUP (CUMBERLAND)

Brayshaw, Milton M.

Hancock, Clinton J.

Haughton, Nicholas J.

GREEN VALLEY (TAZEWELL)

No physicians

GREENVIEW (MENARD)

Bowman, Wm. Townzen

Hamil, Chas.

Orr, Loran Ernest

Sprouse, Jennie Glenn

GREENVILLE (BOND)

Cartmell, Harry D.

Cordonnier, Justin Jos.

Cordonnier, Louis Jos.

Dixon, Wm. C.

Easley, Wm. T.

Hall, Wm. Lee

Keith, Archibald M.

Luzader, Katherine Belle

Ravold, Marie L.

GRIDLEY (McLEAN)

Adams, Edwin Melville

Bradford, Mary Elizabeth

Moate, Thos.

GRIGGSVILLE (PIKE)

Chiasson, Placid Nelson

Loveless, Harry Clayton

GURNEE (LAKE COUNTY)

Smith, Winston Wm.

Young, Hiram O. B.

HALLSVILLE (DEWITT)

McLean, Chas. Thos.

HAMILTON (HANCOCK)

Hathaway, Robt. Meredith

Miller, John A.

Runyon, Chas. A. (See Elvaston)

HAMMOND (PIATT)

Lewis, Estelle Vivienne Noe

Lewis, Tullis Blaine

McNutt, John Hestain

HAMPSHIRE (KANE)

Olms, Frank A.

HANNA CITY (PEORIA)

Rohrbaugh, Edward Egleston

HANOVER (JO DAVIESS)

Gollobith, Edward Frank

HARCO (SALINE)

Empson, M. D. (See Galatia)

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HARVARD (McHENRY)

Maxon, Jesse Garfield

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Schmid, Henry John

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HAVANA (MASON)

Auld, Douglas De Valle

Corey, Fredk. Johnson

Martin, Franklin K.
 Steele, Wm. Arthur
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HEBRON (McHENRY)
 Bailey, Chas. Whitney
 Brown, Edw. V.
 Shanahan, Edmond Francis

HECKER (MONROE)
 Eckert, Alfred Fred

HEGEWISCH (COOK)
 (See Chicago)

HENDERSON (KNOX)
 Cooper, Emma Louise

HENNING (VERMILION)
 James, Jasper Milton

HENRY (MARSHALL)
 Coggeshall, Trovalo Chester
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 Hermann, Ewald Emil
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 Fitzgerald, James Patrick (See Chicago)
 Frank, Ira (See Chicago)
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 Hamilton, Robt. Alonzo
 Kimball, Zeb Vance
 Seymour, Homer A.
 Telfer, Geo. Avera

HILLSDALE (ROCK ISLAND)

No physicians

HILLVIEW (GREENE)

Garrison, Harvey W.

HINCKLEY (DE KALB)

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 Frank, Wm. Washington
 Freeman, Arthur B. (See Chicago)
 Lueders, August Henry
 Neall, John Howard
 Neall, Mary Wild Paulson
 Rawlins, Benj. Lewis (See Chicago)
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 Scott, Ernest Newton
 Stuenkel, Arthur John
 West, Wm. Kerr
 Wohlgemuth, Janet Malcolm
 Woodard, Herbert Booth (See Chicago)

HOFFMAN (CLINTON)

Fischer, Andrew Leroy

HOLCOMB (OGLE)

Henderson, Geo. S.

HOMER (CHAMPAIGN)

Brayshaw, Jos.
 Johnson, Chas. Edwin
 Walton, Jos. Willard

HOOPESTON (VERMILION)

Bell, Jos. Sloan
 Brobeck, Alexander Lane
 Earel, Albert Marion
 Elvidge, Ross Edmund
 Hammond, Kenneth Herbert
 Johnson, Finley P.
 Jones, Leroy
 Kline, Ralph Glenn
 Moore, Joseph Cleve
 Nelms, Chas. Oscar
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 Mettler, Lee Harrison
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HUDSON (McLEAN)

McGee, Geo. R.

HULL (PIKE)

Carder, Lee C.

HUMBOLDT (COLES)

McDougle, James

HUME (EDGAR)

Whalen, Chas. Peter

HUNT (JASPER)

Martin, Lewis

HUNTLEY (McHENRY)

Statler, Oliver Isaiah

HURST (WILLIAMSON)

Burkhart, Victor H.

HUTSONVILLE (CRAWFORD)

Voorheis, Chas. Henry

ILLIOPOLIS (SANGAMON)

Stanford, Vernon Bunn
 Willcockson, Homer Bryant

INDIANOLA (VERMILION)

Odbert, Franklin N.
 Worthington, Richard R.

INDUSTRY (McDONOUGH)

Botts, Ira Alfred
 Stites, Randolph Ora
 Stocking, Amer Mills

INGLESIDE (LAKE)

Paden, Chas. M. (See Chicago)

INGRAHAM (CLAY)

Jayne, Wm. J.

IOLA (CLAY)

Cruise, Carl V.

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 Stoops, Perry Houston
 Wood, Oliver Marshall

IRVINGTON (WASHINGTON)

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 Enos, Laurens
 Giers, Louis J.
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 Lewis, Carl Fredk.
 Marsden, Bertram A.
 Potter, Chas. Chandler

JOHNSTON CITY (WILLIAMSON)

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 Green, Louis H.
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 McKee, John Forsythe
 Mozley, John Marshall
 Roberts, Ira T.
 Tarr, Augustus Willard
 Love, Loren Lennoth

Book Reviews

THE SURGICAL CLINICS OF NORTH AMERICA. (Issued serially, one number every other month.) Volume 13, No. 5 (Chicago Number—October, 1933). Octavo of 254 pages with 93 illustrations. Per clinic year, February, 1933, to December, 1933. Paper, \$12.00; Cloth, \$16.00 net. Philadelphia and London: W. B. Saunders Company, 1933.

The contributors to this number are Doctors Andrews, Bettman, Chandler, Christopher, Compere, Loyal Davis, de Tarnowsky, Herbst, Huggins, Kretschmer, McNealy, Meyer, Miller, Portis, Sarma, Speed and Tivnen.

A MANUAL OF DISEASES OF THE NOSE, THROAT AND EAR. By E. B. Gleason, M. D., LL. D., Professor of Otolaryngology, Medico-Chirurgical College Graduate School of Medicine, University of Pennsylvania, Philadelphia. Seventh Edition, Revised and Entirely Reset. 651 pages with 261 illustrations. Philadelphia and London: W. B. Saunders Company, 1933. Cloth, \$4.50 net.

In this edition much material has been eliminated, much new material has been added, many paragraphs have been rewritten and there have been many changes throughout the work.

The formulary at the back of the book has been amended to include additional therapeutic details.

A TEXT-BOOK OF MEDICINE (By 141 American Authors). Edited by Russell L. Cecil, A. B., M. D., Sc. D., Professor of Clinical Medicine, Cornell University, Medical College; Associate Attending Physician, New York Hospital, New York City. And Associate Editor for Diseases of the Nervous System, Foster Kennedy, M. D., F. R. S. E., Professor of Neurology, Cornell University, Medical College; Director, Department of Neurology, Bellevue Hospital, New York City. Third Edition, Revised and Entirely Reset. 1664 pages, illustrated. Philadelphia

and London: W. B. Saunders Company, 1933. Cloth, \$9.00 net.

Since the appearance of the second edition of this work many important advances have been made in internal medicine, especially in the fields of infectious diseases and endocrinology. Several infections have definitely taken their place in the virus-borne group, and important new and fundamental work has broadened our knowledge of the disorders of the pituitary, suprarenal and parathyroid glands. Much new material has been added and the entire book has been reset and the work brought completely up-to-date.

DIET AND DENTAL HEALTH. By Milton T. Hanke. Chicago, Illinois. University of Chicago Press. 1933. Price \$1.00.

This work presents detailed information concerning the studies on dental problems that have been carried out in the laboratories of the Otho S. A. Sprague Memorial Institute, University of Chicago, by the Chicago Dental Research club.

NEMBUTAL PREMEDICATION

I use Nembutal, 3 grains (0.194 Gm.) by mouth, in addition to pantopon and scopolamine, for preoperative medication. The pantopon and scopolamine are given one hour before the operation, and Nembutal, 1½ grains, is given a quarter of an hour later and repeated quarter-hourly until the patient is asleep, the maximum dosage being 4½ grains.—Dr. F. P. de Caux, Anesthetist Woolwich War Memorial Hospital, London, in *Anesth. & Analg.*, Mar.-Apr., 1932.

ONLY WAITING

Small Boy: "Grandmother, when are you going to start playing football?"

Grandmother: "Why, sonny, I can't play football. Why?"

Small Boy: "Well, papa says he is going to buy a new car as soon as you kick off."—*Carolina Buccaneer*.

Original Articles

THE VETERANS' ORGANIZATIONS AND THE MEDICAL PROFESSION*

F. O. FREDRICKSON, M. D.

CHICAGO

Mr. Chairman, Colleagues, Members of the Veterans' Service Committee, and Honored Guests: I shall speak to you rather briefly outlining the set-up of the Medical Commission in the Department of Illinois, American Legion, and of the Veterans' Service Committee of the Illinois State Medical Society. Second, I shall attempt to describe to you the veterans' legislation that has been built up in the last ten years and try to lead you up to the passing of the President's Economy Bill. However, I shall not attempt to explain the new veterans' bill which relates to benefits and hospitalization of veterans with service connected disabilities at the present time. The slate has been wiped clean and we are back where we started.

Two years ago the Illinois Department Surgeon of the American Legion introduced a resolution at the Executive Committee of the Department of Illinois recommending that an organization called the Medical Commission be organized. The resolution was adopted. We organized the Medical Commission made up of the Department Surgeon, the Division Surgeons, of which there are five in the state of Illinois, District, County and Post Surgeons. The first year we had about twenty or twenty-five members of this Commission. The following year Dr. Norbury, who was then Department Surgeon, increased the number to about fifty or seventy-five. At the present time we have 100 per cent. Division Surgeons, 5; Districts, 24; Counties, 85; Posts, 189; in other words, we have 303 members of the Medical Commission in the Department of Illinois. Simultaneously with the introduction of this resolution there was a similar resolution introduced into the House of Delegates of the Illinois State Medical Society, recommending the organization of the Veterans' Service Committee. A similar resolution was also introduced in the Council of the Chicago Medical Society recommending a like organization. The object of the Medical Commission is as follows:

First, to effect a close contact between the

American Legion and the medical profession through the Veterans' Service Committee of the Illinois State Medical Society. Second, to study carefully all problems of actual interest to the betterment of organized medicine; also to assist service officers of the Legion from a medical standpoint, in proving service connected disabilities in order that cases of deserving veterans may be made compensable. Third, to guide the welfare work of the Legion in such a way as to prevent misunderstandings between the Legion and the County Medical Societies in their respective communities. Fourth, to organize the medical side of the American Legion for effective work in behalf of deserving veterans.

Remember that every case of rehabilitation is a medical problem. I have always advocated that there should be at all times a recognized medical man on the rehabilitation committee of the Legion. So far we have not obtained this. Also, every legionnaire is entitled to the same consideration and same privileges no matter what his profession, be he doctor or lawyer or in other profession or business; in other words, I have in mind that the veteran doctor should receive the same consideration that any other legionnaire or member of any other veteran organization receives.

Fifth, to contact with the Veterans' Service Committee of the County Medical Society in your respective communities.

I should like to present to you an outline of how legislation relative to the veterans' benefits has been brought about. Many things have insidiously crept into these congressional enactments by amendments from time to time. These amendments were often detrimental to the medical profession, not due to the veterans' organizations but due largely to the legislators and congressmen whose only thought has been to be returned to Washington by their constituency.

May I call your attention to the various dates that are important in medical legislation with relation to veterans. Of the three dates, April 6, 1917, is the date war was declared; November 11, 1918, the Armistice was signed and hostilities ceased, and July 2, 1921, is the date when the war closed officially. Around these dates revolved many of the decisions that made for a granting or denial of benefits conferred upon veterans of the World War.

*Read before Veterans' Service Committee Dinner, Peoria, May 16, 1933.

*Statistics Lect. John Bell Howe.

It is impossible to give in detail a comprehensive account of the law upon which the colossal medical function of the Veterans' administration was built up. On October 6, 1917, six months after war was declared, the War Risk Insurance Bureau was organized. This made available to every veteran, life insurance during the war. On August 9, 1921, there was organized the Veterans' Bureau. To this Bureau was transferred all the functions, powers and duties of the War Risk Insurance Bureau, and also there were transferred all the personnel, functions, duties and powers of the Board of Vocational Education, all the property of the U. S. Public Health Service. There was one central office established in Washington, 14 regional offices and 140 sub-offices. All the government facilities were placed at the disposal of the Veterans' Bureau, such as the War and Navy Departments, the Department of the Interior, the Treasury Department and the National Home for Disabled Veteran Soldiers. Also, the Director was instructed to contract state, municipal and private hospitals for the care of veterans. On the above date also the benefits were extended only to veterans of the World War. These disabilities must have occurred in line of duty; in other words, must have been service connected disabilities. Another qualification was that the applicants must have been honorably discharged from the service. Disabilities due to misconduct were entirely uncomensable. Then Section 300 of that law read: Any commissioned officer, enlisted man in the Army or Navy Nursing Corps, injured in line of duty was entitled to benefits or for the aggravation of disabilities that existed at the time of enlistment. The last paragraph in Section 300 relates to a presumptive clause referring to neuro-psychiatric diseases and tuberculosis of the pulmonary type. Under this law those veterans disabled in line of duty were entitled to medical, surgical, convalescent care, dental and prosthetic appliances.

Now then we come to the Congressional Act of April 20, 1922. Bill No. 194 from the 67th Congress which provided for additional hospital construction including all the facilities. There were made available by Congress 17 million dollars. The idea of this Act was to include veterans of other wars in these benefits; such wars as the Spanish-American, the Philippine and Boxer Rebellion and all other expeditions. This,

too, related only to neuropsychiatric disease and tuberculosis of the pulmonary type.

On March 4, 1923, Bill No. 542 was passed. This allowed an extension of benefits in line with the presumptive clause that related to tuberculosis irrespective of the organ involved. You can see how gradually the benefits were increasing.

Now then, the Act of 1924, Section 200, extended the benefits to the veterans of all wars, campaigns and expeditions since 1897. On June 7, 1924, there was an extension of the presumptive clause to 1925. Many of these were presumed to have been service connected disabilities. Many of them received the presumption all the way from four to six years. Then there was a further extension in regard to the various diseases, such as tuberculosis, no matter what organ was involved, neuro-psyiatric disease, encephalitis lethargica, and amebic dysentery. You can see that these benefits had been increased from time to time. It was then that the medical profession should have persisted in their protestations against further liberalization of the law. However, legislation went on unrestricted, so that the law relative to those veterans who may receive the benefits was made to include all veterans of all wars and expeditionary forces irrespective of whether they were service connected or not.

Now then, we come to July 3, 1930, the great disability allowance bill. All veterans, irrespective of whether their disability was service connected or not, who had 25 per cent. disability were getting pensions and were permitted to enter veterans' hospitals for treatment. I should like to quote Ray Murphy in the last number of the *Legion Monthly*. He compared this legislation to the Siege of Troy. You all know about the Siege of Troy; when Agamemnon's Greek forces failed to penetrate the impregnable walls of Troy, they built a wooden horse and offered it to the Trojan people. The Trojans accepted it as a gift and dragged it into Troy thinking they were getting something of value. You all know what happened. For the last ten years Congress had been building up a system of veterans' legislation surrounded by an almost impregnable wall of service connection. Finally generous Congress presented the American Legion with a wooden horse in the guise of what we call the disability allowance law. It is this law that caused the destruction of all the veterans' benefits that have

been built up through legislation in the last ten years. So we are back where we started. The slate has been wiped clean. The new Economy Bill, however, created an injustice to certain classes of veterans, particularly with service-connected disabilities. Our President, too, is beginning to realize that such is the case, and no doubt will liberalize the law. As conditions improve there is again the danger of an over-liberalized legislation. Therefore it is for the medical profession to study carefully all future veterans' legislation of mutual interest to the medical profession and the veteran. The medical profession believes that all service connected disabilities should be cared for by the government and that these veterans should be liberally paid for their disabilities and their families who are dependent upon them should be cared for. Another thing, the medical man is always ready to render medical service to deserving veterans unable to pay.

One more point before closing is the question of expenditures. According to General Hines there were \$6,318,108,733.00 spent for World War veterans out of a total of \$15,370,887,853.00 intended for veterans of all wars during the last 143 years. This is at the rate of \$45,774,163.00 per month, of which \$26,796,308 went to World War veterans.

In conclusion may I again suggest a continued close cooperation between the Medical Commission of the American Legion, and the Veterans' Service Committee of the Illinois State Medical Society with a view to a definite mutual understanding medically between the medical profession and veterans' organizations.

AMERICAN ACADEMY OF PEDIATRICS IN THE STATE OF ILLINOIS*

GEORGE EDWIN BAXTER, M. D.
CHICAGO

The following quotation describes the organization known as the American Academy of Pediatrics:

The American Academy of Pediatrics is an organization intended to include, as nearly as possible, all of those physicians in the United States and Canada who, by adequate training and proper standards of practice,

deserve to be recognized as pediatricians. As Associate Members, it aims to include also those who, by work in allied fields, are able to give it and its members valuable aid in furthering its special objects.

The academy has been formed because of the obvious need of a country-wide organization of pediatricians to perform important services which have not been undertaken by an existing organization.

The objects of the Academy, as stated in its Constitution, are as follows:

Section 1. The object of the Academy shall be to foster and stimulate interest in pediatrics and correlate all aspects of the work for the welfare of children which properly come within the scope of pediatrics. The Academy shall endeavor to accomplish the following purposes:

(a) To establish and maintain the highest standards for pediatric education in medical schools and hospitals, pediatric practice and research;

(b) To perpetuate the history and best traditions of pediatric practice and ethics;

(c) To maintain the dignity and efficiency of pediatric practice in its relationship to public welfare;

(d) To promote publications and encourage contributions to medical and scientific literature pertaining to pediatrics; none of which objects are for pecuniary profit.

It plans actively to further all of these through national, regional and State committees. National and regional scientific meetings will be held. Scientific research and clinical investigation will be encouraged, and publication of worth while studies, monographs, etc., will be facilitated. Standards of education, hospital organization, and practice, will be subjects for constant study.

More than any other branch of medicine, the care of children in its present development is inevitably intimately associated with many social movements which its professors must aid, and often should be prepared to lead and guide, not only as individuals, but through definite organization. The recent reports of the White House Conference have indicated how patent this need is, and how often movements which would better have been under medical guidance have gone on in other hands for lack of available proper medical organization. The Academy is particularly interested in meeting this need satisfactorily. It will make constant study of conditions and progress in all fields of child welfare activity, and endeavor to be prepared through its various committees to furnish competent, authoritative professional aid and guidance wherever these are wanted.

To accomplish these objects, the country has been divided into regions and each region has a certain number of states under its jurisdiction. The Academy operates in each state through the medium of a State Committee. This committee is charged with the task of carrying out in the State the various objects for which the Academy

*Read at Chicago Pediatric Society, October 17, 1933.

is organized. This means that each State Committee shall study the needs of that State and shall formulate a program to meet the conditions present in such State. The committee appointed for the State of Illinois met in the very early spring and formulated a program of activities.

This committee has been energetically at work. The committee brought to the attention of the officers and councilors of the State Medical Society that there was sufficient interest in pediatrics to warrant the establishment of a section on pediatrics.

There was a called meeting in Peoria at the time of the State Medical Society Meeting in May, 1933, inviting Doctors who were interested in the formation of a section on pediatrics. The purpose of that meeting was to determine the sentiment for or against the organization of a section on pediatrics in the Illinois State Medical Society. The subject was presented as outlined in the following statement:

The care of the child is an important part of every physician's practice. The problems in the care of the well child, the diseased conditions in the child, nutrition and growth in childhood, are most important; first, for the sake of the child, and second, for the legitimate betterment of the physician's economic condition. It is necessary for all of us to better inform ourselves in the care of children in order that much of the welfare work now being done by organizations may be done in the Doctor's office.

There has been a rapid and large growth of the specialty of pediatrics. This is evidenced by:

1. A large increase in attendance at the Section on Pediatrics in the American Medical Association, equal to or greater than that in the Section on Medicine.

2. The marked increase in the size of the Chicago Pediatric Society in the past five years. Membership has been more than doubled.

3. The required work in pediatrics in the Class A Medical Schools has about tripled in the past ten years. It is now about equal to the requirements in Gynecology and Obstetrics.

Because of the rapid growth of the specialty of pediatrics, it is necessary to use all available means to bring to the practitioners of medicine the latest advances made in the care of infants and children. The care of infants and children has been popularized with the public to such a degree that numerous organizations have been formed by lay people with popular backing, and in many instances supported professionally by members of our specialty, whose object has been to better child health.

To make the Doctor's office in a community the health center is an ideal if the physician is qualified to meet the demands. There has been created a demand

on the part of the public for preventive measures, hygienic teachings, protection against infection and communicable diseases, dietetic management, understanding of behavior problems and disciplinary measures. All of these subjects should be known and taught by the physician as a part of his general medical practice. He should recognize the economic value to the patient as well as to himself. He should know that good reliable medical service is rightfully demanded. He should know how to direct parents in the care of the well child. He has kept himself so much engrossed in the study of disease and pathology that he has neglected the normal physiology and growth factors in infancy and childhood. He has lost or never possessed a child consciousness. Consequently, lay organizations have usurped his rightful place in the health matters of the child. The demand has exceeded the individual Doctor's supply. The physician has failed where lay organizations and trained workers have succeeded. The market has been created for constructive medical service in the growing healthy child and the market has not been supplied with the proper medical supervision. One of the most effective weapons against State Medicine is to be found in the proper care and direction of health problems in the child by the family Doctor.

To accomplish this in the State of Illinois, two things are necessary; first a desire and willingness to teach on the part of those who are qualified; and second, a desire to be taught on the part of those who are not qualified. The post-graduate education of physicians in the subject matter pertaining to the health and the care of children, can be greatly augmented by establishing a section on pediatrics in the State Society, in order to arouse in all physicians a greater child consciousness. We were advised by some who were interested in the formation of a Section that we should put on our own program at the time of a State meeting, and demonstrate to the officers and councilors that there is a real demand for the Section. We found that such a procedure was unnecessary because a sufficient interest was aroused to gain official attention. We were unanimous in the opinion that more could be accomplished by functioning as an integral part of the State Society, than by organizing a State Pediatric Society.

Much to the committee's surprise and gratification, the Council, at the same meeting of the State Society in Peoria, granted the request for a Section on Pediatrics and this Section was to begin to function immediately. The success of this Section on Pediatrics is directly dependent upon the physicians in the State of Illinois who are especially interested in and acquainted with pediatric problems. Our State Society for a number of years has been active in opposing all measures which lead toward State Medicine. Those who have been limiting their work to the

care of children have not sufficiently interested themselves in the work of the State Society. A few men have kept in touch with it but the majority of us have been self sufficient and contented and have utterly failed in our responsibilities to the State Society.

There was the largest gathering of men from our specialty in Peoria that has ever been present at a State Medical Society meeting and I have yet to hear anything but enthusiastic remarks about the good time every one had and a realization that much has been missed in medicine by failure to have become acquainted with the members of the State Society and its activities. It would be well for every member present to read the published report, in the July issue of the ILLINOIS MEDICAL JOURNAL, of the meeting of the House of Delegates. Learn what is actually going on and being done by the members of the State Society. If you know what is being done, you can then give some constructive criticism if you have any.

At the called meeting mentioned above, the following committee was appointed to arrange for the program of the first meeting of the Section on Pediatrics at the State Medical Society Meeting to be held in 1934. Dr. Maurice L. Blatt of Chicago, Chairman; Dr. W. L. Crawford of Rockford, Vice-Chairman and Dr. John R. Vonachen of Peoria, Secretary. This committee was charged with the duty of arranging for the first program to be presented at the opening session of the Section on Pediatrics in the State Society.

Another activity of the State Committee was to appoint a sub-committee whose duty it is to contact with all governmental agencies throughout the State for the purpose of aiding or advising with governmental agencies in all matters pertaining to the welfare of children. This contact has been made and two members, Clifford Grulee and Sam Hoffman, of the Academy, have been appointed on the advisory committee. This committee is headed by an appointee from the State Department of Health.

A third activity was the appointment of a committee to contact with various lay organizations throughout the City and State for the purpose of advising with the members of these organizations and attempt to direct their activities

from a medical standpoint. These contacts have already been made by the sub-committee. The Chairman reports that it is a large task but that the work is made much easier because of the contacts made previously by the Chicago Medical Society and the Illinois State Medical Society.

A fourth activity is what we call Pediatric Programs or Post Graduate Courses offered to groups of County Societies and Branch Societies of the Chicago Medical Society. The prime object of this course is to awaken a greater interest on the part of the practitioners of medicine in all matters pertaining to the welfare of the well and sick child to the end that he may be a leader of such activities in his community, *if such activities are necessary.*

The ideal sought for in this program is that the general practitioner who takes care of by far the largest number of children, shall be so well informed that eventually there will be no need of any lay organizations whose object is to look after the welfare of children. The slogan which expresses the ultimate object is "*to make every Doctor's Office a Health Center.*"

The committee counselled with the educational department of the Illinois State Medical Society and has formulated its program by and with its approval. The State has been divided into about eight districts with from 8 to 20 counties in each district and the meetings throughout the State have been arranged for by a District Chairman, appointed by the State Committee, for each one of the Districts. This Chairman has been instructed to work through the channels of the regular organized medical societies which consists of proper contact and arrangement with the secretaries of each County Society in the District. These programs are strictly medical in character.

Seven such meetings have been held during July, September and October throughout the State and have been received with a great deal of enthusiasm. These meetings were held at Bloomington, Peoria, Quincy, Monmouth, Rockford, La Salle and Benton. A request came from Rock Island for a program which was cheerfully granted. Invitations have been received for some return engagements next year. We are prepared to present a modified program to the Branch Societies of the Chicago Medical

Society this coming year. Arrangements have already been made for programs to be presented at meetings of the following Branches of the Chicago Medical Society. Irving Park, West Side, North Side, Evanston, Calumet, South Chicago, Southern Cook County. These programs are being voluntarily offered to the Branch Societies and to County Societies free of cost to them for this year. The acceptance is entirely in their hands. We have stressed this point so that there can be no question of a voluntary acceptance of such a program. The committee is strongly of the opinion that, particularly under the present economic conditions, it is utterly impossible for the great mass of practitioners of medicine to go to any medical center and attend a post graduate course; therefore, they have determined to carry this work to the Doctors in the various communities if the Doctors desire to have it. These programs are purely medical. They are altruistic. There is no idea of self advertising; in fact, the men who are giving the programs are giving them at a very definite sacrifice. There are five teams of teachers, each team headed by a teacher of Pediatrics from a medical school or a Children's Hospital. Each one of these teachers picks his group of assistants to present the program. The personnel of each group necessarily will be changed from time to time and for various reasons new men will be asked to present the program.

The following quotation from the address of Dr. Maurice L. Blatt on the subject "Preventative Measures in Childhood" delivered at the Rockford meeting September 20, 1933, gives a clear idea of the importance for practitioners of Medicine to learn and teach preventive medicine as applied to children.

It is difficult to inculcate an appreciation of his part in preventive medicine to a student in a medical college. He is interested in that vast field of diagnosis and treatment of disease, a knowledge necessary before the thought of prevention can enter his mind. There is little in the curriculum to call his attention to prophylaxis. To be sure he learns etiology but in the majority of instances, his past experience is not such that he is able to correlate etiology with the abstract idea of prevention of morbidity and mortality as it applied to him in his capacity as a private physician. His hospital training, the care of sick patients, only accentuates his position in relationship to this prob-

lem. This condition is one of the factors which has resulted in the taking over by public health organizations of functions distinctly those of the family doctor and pediatrician. Unfortunately, this department is frequently under the guidance of self-seeking politicians, both medical and non-medical, who because of insufficient study or in their zeal for self-aggrandizement, fail to consider the indirect effect on the public and upon the doctor practicing medicine as a vocation. Brought about by the rapid and extensive increase in medical knowledge which the colleges attempt to disseminate to students and the failure to lay sufficient stress on his duty, there has resulted a usurpation of part of the prophylactic work of the private physician by departments of health. The work had to be done and since the physician did not take the lead himself, the public organizations took up the work. Our patient must be protected and either we have to protect them ourselves or others do it for us. In the opinion of many medical economists, and with this opinion I agree, no organization, no matter how intelligent or how well equipped can take the Doctor's place.

Control of medicine will remain with the physician if he rises to this opportunity; it will be lost and usurped by public bodies if he fails in this trust. A sense of the responsibility for continuing the individuals of the family in good health is of highest importance. To prevent pneumonia in a child, to prevent heart disease complicating rheumatism, the grandmother's chronic nose and throat infections must be treated and her contact with the child interdicted until such time as she is free of infection. This is the Doctor's duty.

We hear much nowadays about the crisis in our Nation, the necessity for emergency actions; the necessity for the Government to borrow and spend huge sums of money; the necessity for the people to exhibit great patriotism in order to preserve our Americanism and American Institutions. So indeed in Medicine; we are at last being awakened to our necessities, to our crises. The practice of Medicine has been so gradually and insidiously encroached upon that only a few were smart enough and far sighted enough to see the trend of medical events. Fortunately, we know the way out. It is through the re-instatement of the family Doctor in his rightful place in Medicine. To aid in the accomplishment of this, the Academy of Pediatrics is dedicated and committed and is attempting to do its part to make all medical practitioners more child conscious, to aid them in so equipping themselves that they will lead and direct all activities for the welfare and the protection of children.

PNEUMOPERITONEUM AND SURGERY IN MANAGEMENT OF ABDOMINAL ADHESIONS*

B. H. ORNDOFF, M. D.
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The fixation of abdominal viscera in such a manner as to be symptom producing is one of the very important problems confronting physicians today in the care of postoperative patients. The fixation of one peritoneal surface to another seems to be a physiologic function rather than a pathologic condition. The capacity of peritoneal surfaces to form fibrinous adhesions with subsequent fixation has made modern surgery of the abdomen possible.

Injuries to the surface of the abdominal viscera are almost always followed by the formation of a fibrinous exudate and in most instances by fibrinous adhesions which tend to limit further trauma, to prevent further distribution of irritating substances and when the usefulness of this change has been accomplished, to undergo dissolution and return normal mobility and the normal intervisceral relations to the abdomen.

It is obvious that if the peritoneum is found not to possess this essential function of forming peritoneal adhesions, whether it be from intrinsic changes causing a loss of this function or from the presence of an agent introduced into the peritoneal cavity which would prevent adhesion formation, abdominal surgery of any character becomes not only very hazardous, but would present entirely new surgical problems that could not possibly be handled by standard methods of operating now in common practice.

While the formation of fibrinous adhesions is an essential function of the peritoneum, the conversion of fibrinous adhesions into organized fibrous adhesions with permanently fixed abdominal viscera cannot be considered physiologic but is usually responsible for pathological changes in the viscera and frequently is symptom producing. The extent of the fibrous adhesions, the degree of restricted mobility, the necessity of motion in the fixed viscus, the character of the function of the affected viscus, the position the viscus is forced to assume, the nervous trauma, circulatory disturbances and other functional in-

terferences together with the mental and psychic influences create a complex which does not constitute a distinct disease entity, but incapacitates the individual to a degree commensurate with the aggregate involvement.

It is probable that every laparotomy is followed by fibrinous peritoneal adhesions, while comparatively few go on to fibrosis. Again, postoperative fibrous adhesions are not frequently sufficiently disturbing to the normal functions of the viscera to greatly incapacitate the individual, but every surgeon who has contributed any considerable share of his work to abdominal surgery has a relatively small, but very definite percentage of patients with postoperative results and complications which require further treatment.

Cases with symptoms due to fixed abdominal viscera range between those with very simple digestive interferences, to cases with symptoms more or less profound in character, simulating at times almost every known abdominal condition and they sometimes include acute intestinal ileus and peritonitis.

Since the very earliest investigations were made leading to modern methods of surgery, ways and means have been devised, experiments have been performed and experiences recorded for the prevention of damaging abdominal adhesions. Investigators have prepared and introduced into animals and into man a long list of substances intended to prevent the formation of undesirable adhesions. In many instances adhesions were prevented to a greater or lesser degree but we must remember that we are striking at the very heart of success in abdominal surgery, for if an agent or procedure would prevent entirely the formation of adhesions, the surgical procedure would in itself become a fatal procedure.

Investigators find that fibrin appears on the surface of the damaged peritoneum within a time period of a few minutes and fibrinous adhesions are well formed within a few hours, while organized fibrous adhesions replace fibrinous adhesions after a period of a few days or several weeks.

The use of air in the peritoneal cavity for the prevention of adhesions was introduced by Bainbridge in 1908. His method consisted essentially of closing the incision around a small rubber tube in such a manner that when air had been

*Read before Section on Radiology, Illinois State Medical Society at Peoria, Illinois, May 17, 1933.

introduced into the peritoneal cavity through the rubber tube, it was quickly withdrawn and the air retained. It was hoped that the air distending the peritoneal cavity would prevent fixation of abdominal viscera to the anterior abdominal wall. The success of this method seems to be very limited and consequently has received but little attention since it was introduced.

My experience with the introduction of gaseous media into the peritoneal cavity began in 1919. The purpose of the work was an endeavor to advance the usefulness of x-ray examination for the diagnosis of pathologic conditions in the abdomen. While the field of abdominal diagnosis was thus being enlarged, the therapeutic use of pneumoperitoneum also received recognition.

The therapeutic introduction of gaseous media into the peritoneal cavity for the release of fixed abdominal viscera was begun early in 1920. The first work was confined to cases of tubercular peritonitis and later cases with postoperative adhesions were treated. In the cases with tubercular peritonitis the results were exceedingly satisfactory inasmuch as the infectious phases of the disease were greatly improved and the visceral fixation was either eliminated or remained without the production of symptoms. In these cases we were also convinced that x-ray treatment into the oxygen filled peritoneal cavity was responsible for a large measure of our success. The x-ray treatment in cases with adhesions, but not tubercular, did not prove to be of benefit and after some experience, it was discontinued. In almost all of this work, the transabdominal route was used for introducing the gas into the peritoneal cavity, even in postoperative pneumoperitoneum it was preferred to the Bainbridge method.

Our clinical experience spreading over the past thirteen years has proven to us that it is a useful therapeutic procedure. During the early part of our work some changes were made in the general management and technique employed, but for the past eight years we have introduced no particular change.

The cases accepted for this work were those who suffered from more or less profound abdominal disturbances and in which the x-ray examinations with pneumoperitoneum warranted the conclusion that the visceral fixation was the principal etiologic factor.

The treatment in brief is as follows: A large

diagnostic quantity of oxygen is introduced into the peritoneal cavity and complete x-ray fluorescent screen observations are made and a number of x-ray films are exposed to make permanent records with the patient in all of the positions required in this diagnostic work. Where there is a question of tubercular peritonitis, malignancy, or other conditions, the peritoneoscope is introduced through the abdominal wall and the viscera of the abdomen observed through the lamp and lens system. When the x-ray examinations have been completed, the major portion of the oxygen is removed from the peritoneal cavity and the patient is allowed to carry the remaining portion for from one to four days. The amount of oxygen remaining in the abdomen is then increased by the introduction of about another liter of oxygen. This is allowed to remain for a few days when a larger quantity is introduced and this again repeated, increasing the amount introduced until the patient is carrying quantities of from one to four liters constantly.

The distress noted by the patient following the first pneumoperitoneum is occasionally quite disconcerting, but as the patient becomes more accustomed to the presence of oxygen in the abdomen and the tugging of the viscera while assuming different postures or walking, they manifest very little or no discomfort.

While the patient continues to carry the gaseous media in the abdomen, several things are accomplished:

1. The peritoneum becomes accustomed to the presence of gas.

2. The position of organs which depend upon a vacuum is changed.

3. The disturbances of a physiologic character noted when oxygen is first introduced soon disappears.

4. When the patient is walking, working, or assuming different postures the mobility of the abdominal organs is limited only by their natural ligaments and attachments. Those organs that are fixed pathologically exert a tugging effect upon the adhesions so long as the patient continues to carry the gaseous media in the peritoneal cavity.

5. In many instances the symptoms are alleviated, the nourishing capacity is increased and the feeling of well being is greatly enhanced. In these instances the pneumoperitoneum is con-

tinued at intervals for many weeks and sometimes for many months, but at no time is the peritoneal cavity allowed to become free of the gaseous media.

3. In cases where the wearing of gaseous media in the peritoneum shows very firm visceral fixation, probably of a fibrous character, and so securely fixed that no release is accomplished in the period of two or three weeks, operative intervention should then be instituted. The patient is considered prepared for surgery only when they are thoroughly accustomed to the presence of gaseous media in the peritoneal cavity and when all intestinal reaction has become quiescent.

7. The operation consists of opening the abdomen and releasing the fixed viscera using standard accepted surgical procedures with the least possible intraabdominal trauma, closing the abdomen in the usual way and again introducing gaseous media into the peritoneal cavity and replacing it as rapidly as it is absorbed for a period of about ten days.

8. As soon as the patient is returned from surgery, 1000 cc of tap water is introduced into the colon and this quantity is replenished with 500 cc at intervals of 6 to 12 hours, depending upon the patient's capacity to retain it. The postoperative care includes the desirability of changing the patient's position at frequent intervals from a recumbent to a semi-sitting posture, as well as rotating to both sides, in spite of the distress that must necessarily ensue.

In summarizing the clinical results of cases treated, I feel justified in stating that while many of our cases have not remained symptom free, yet I can say that all of the cases received benefit from the work. Up to date there has been no mortality which could be attributed to the pneumoperitoneum or the surgical interference. Several cases have had repeated operative procedures following the original operation, and we have not been obliged to re-operate in a single case and I am at present keeping informed of more than fifty whose work was done three or more years ago.

Many of the cases have a pronounced keloid tendency. They seem to do especially well. These cases usually have a strong nourishing capacity. There is a class with poor nourishing capacity who seem to have low resistance to infectious processes in the viscera, yet with the "adhesions

diathesis." They are more difficult to manage and the end results seem not to be so satisfactory.

In closing, may I reiterate that I realize that the results do not accomplish all that I desire in all of the cases, but in many the results are highly satisfactory, a benefit in almost every case that received the treatment: many are improved satisfactorily with pneumoperitoneum alone, and finally no other treatment seems to offer an equal degree of satisfaction.

2561 North Clark St.

DISCUSSION

Homer D. Junkin (Paris): Mr. Chairman and Members of the Society: It has been my good fortune to have followed Dr. Orndorff for the past twenty-five years. I saw him as a pathologist, as an anatomist, and in surgical experience. I mention this simply because I have a great deal of respect for the radiologist. I find they are men with a big background. They have done much fundamental work to obtain the proficiency they now represent in their field.

In this particular field, those of us who have done general surgery are well aware of the difficulties which we meet in postoperative adhesions. I don't think we have had anything to help us since Crile's message: Sharp dissection, careful peritonization of the raw surface and avoidance of trauma. We have tried various oils intra-abdominally; we have tried various preparations of amniotic fluid which have been put on the market. All of these, to my mind, have failed miserably. Now, Dr. Orndoff gives us a new weapon. In the early part of his work, I remember an article that came out about the dangers of pneumoperitoneum, and there were something like five deaths reported. As I read this article, it told about the gas rising upward, getting about the regions of the neck and the patient finally succumbed after about five or ten hours.

It seems to me that no more skill is required to put a needle into the abdominal cavity than to make a lumbar tap in giving a spinal anesthesia. Perhaps, the latter is the most difficult. Certainly, the deaths attributed to pneumoperitoneum represented a technical error rather than a danger in the procedure.

I have done several cases of pneumoperitoneum for therapeutic purposes. Out West, I encountered a patient who had been in the service where he contracted generalized tuberculosis. Practically all of his organs became involved. First, it was pulmonary. Then the thyroid became infected. Finally, the kidneys became involved as well as the urinary bladder where a large ulcer was found. Then, a series of intestinal obstructions occurred. I operated on him four or five times for this and finally in 1925 I spent about four or five months in Chicago with Dr. Orndoff, and began my pneumoperitoneum work. After I returned home, this patient obstructed very kindly again and I opened the abdomen, removed the adhesions and filled the abdomen with gas. Something like ninety-two pneumoperitoneal

treatments were given over a period of five years. This patient gained in weight from about 115 pounds to 175 pounds. When I left the West and came to Illinois, he moved here and stayed two years. He said this climate was too hot and moved back to Idaho. As far as I know, he is well at this time.

I wish to mention an instance of diagnostic value that came from this work. Out West, I operated on a young lady for appendicitis. A year after the appendectomy, she developed a dermoid of the right abdominal wall at the site of the scar. We referred the case to a Salt Lake Clinic who gave as their opinion: A dermoid of the abdominal wall which involves the cecum. I was perfectly willing to grant that there was a tumor of the abdominal wall but was sure it didn't involve the colon. They had relied entirely upon a simple gastro intestinal examination with the fluoroscope. I did a pneumoperitoneum on this patient. By the lateral position, it was easy to see that the tumor mass was confined to the abdominal wall. The tumor was removed surgically. A year later a small recurrence became evident. The patient had moved to Chicago in the meantime, and Dr. Orndoff irradiated the tumor. It disappeared promptly and has remained well since.

In viewing the apparatus which Dr. Orndoff uses, it seems we have to have a good deal of equipment. This is not essential. One can place the patient on a table in front of the perpendicular fluoroscope and there effectively perform the pneumoperitoneum.

I have one patient who had been operated upon several times for gall bladder disease and postoperative adhesions. About two years ago, we gave a series of pneumoperitoneums without the abdomen being opened. She made a prompt recovery.

On viewing this work, one may fail to grasp the broadness of it. An effective weapon to cope with symptom-producing abdominal adhesions is a great step forward in dealing with these problems of abdominal surgery.

I wish to congratulate Dr. Orndoff upon this paper. It is a masterpiece.

Arthur E. Perley (Quincy): Mr. Chairman, I enjoyed Dr. Orndoff's paper very much. In fact, it is the first time I have heard him speak on the subject of pneumoperitoneum. Wherever I have been and whenever the subject came up, it has always been said that it was a dangerous procedure because there had been some deaths from it. It is apparent that it is not so dangerous if it is properly done. Dr. Santi, in 1927, reported over 1000 cases where it was performed for diagnostic purposes. These cases were done by interns, not more than three being done by a single intern.

Pneumoperitoneum has been done in conjunction with lipiodol. If this is a good procedure, as it seems to be, all I can do is to urge that we try to make it more widespread in different clinics and different parts of the country. I think Dr. Orndoff has shown some reliable results.

As to the subject of adhesions, when I was a student, the professor of surgery used to say we could never tell which patient was going to develop adhesions and which

were not. He operated on some cases that had ulcerative conditions; later on they were operated on for some other condition and there would be no adhesions. Others might have the simple chronic type of appendix; but later on they had to be operated on again for adhesions.

In regard to the apparatus, I wonder whether this could not be done with a simple trocar and oxygen tank.

Dr. B. H. Orndoff (closing the discussion): I wish to thank the gentlemen, who have been kind enough to discuss this paper and especially to thank Doctor Junkin for his complimentary remarks.

I did not attempt to discuss special apparatus designed for use in this work. Our work has been entirely an office and hospital procedure. The special table referred to is not necessary, since one can use an ordinary hospital cart and an upright fluorescent screen apparatus very satisfactorily. Doctor Sante has described a very simple and effective method for introducing oxygen into the peritoneal cavity, in which he uses a 50 c.c. syringe with a Murphy drip apparatus, in which cotton has been placed as a filter and with his apparatus, using air to fill the peritoneum, it becomes a very convenient method.

At a recent meeting of the Pan American Medical Association in Dallas, I was very pleased to learn that quite a number were present who were doing pneumoperitoneum in selected cases at this time. As a diagnostic procedure it is not so popular, but as a therapeutic measure, I believe it warrants our attention at this time. It is true that some four deaths were reported from the hands of those who were doing pneumoperitoneum as first introduced, but I have heard of no deaths resulting in the hands of those whose training and experience command their interest sufficiently to warrant their continued interest in this procedure. Our experience permits me to state that with reasonable care it is a safe procedure.

In closing let me say again that this paper has been presented to show the therapeutic phase of pneumoperitoneum and that no attempt has been made to emphasize the diagnostic possibilities.

MENINGOCOCCUS MENINGITIS; A FURTHER CLINICAL STUDY*

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In a previous report,¹ a series of 190 cases of meningococcus meningitis observed at Cook County Hospital in a period of eighteen months (April, 1927 to September, 1930) was regarded as evidence of an epidemic.

Admissions from 1920 to 1926 numbered from six to sixteen annually and early in 1927 the

*Read before Section on Medicine, Illinois State Medical Society, Peoria, May 17, 1933.

number of cases of meningococcus meningitis increased manyfold. This increase continued through 1930 and the cases to be reported in this article consist of 338 admissions from October, 1928, to June, 1930.

Previous observations that epidemics of meningococcus meningitis occur in cycles of nine to twelve years are not well borne out by this report, for the Chicago district was in the throes of an epidemic from 1927 to 1931 with only brief and slightly restricted intervals.

The epidemiologic fact that meningococcus meningitis is only mildly contagious is again sustained by the fact that among these 338 there were only eleven instances of more than one case in a family. This checks well with Neal's² observation of 13 multiple cases among 500 and my previous figure of five among 190 cases.

The 338 cases were admitted to the Cook County Hospital on the services of Drs. Hoyne, Bower, and Borovsky from October 1928 to June, 1930. Of the 338 cases, 239 or 70.7% occurred among white patients and 88 or 26% among negroes.

The age of these patients varied from three months to eighty years, and 177 (53.3%) were under 14 with 161 (47.7%) above 14. The mortality among this group was considerably higher than in the previous series. The general death rate was 57.1%. However 63 of these patients died during the first 24 hours after admission to the hospital. They constitute then, 32.6% of the total deaths. It is obvious that these patients entered our institution in a very serious, if not moribund, condition and had little opportunity to show any response to therapy. It is not without practical medical thought to exclude these from the general mortality list and to include only those cases that "had a chance." This corrected figure would then be 47.2%. Fifty-two deaths occurred among the 88 negro patients or 59.1%.

The mortality was highest under two and over forty years of age. No patient over fifty recovered from meningococcus meningitis, a total of twenty-five deaths. The lowest mortality occurred from four to five and from six to eight years.

TABLE 1. MORTALITY ACCORDING TO AGE

Age in years	No. of cases	Recovered	Died	Mortality Per Cent.
Under 1	12	4	8	66.6
1 to 2	7	2	5	71
2 to 3	28	14	14	50
3 to 4	10	3	7	70
4 to 5	25	18	7	28
5 to 6	10	4	6	60
6 to 7	11	6	5	45
7 to 8	13	11	2	15
8 to 9	13	11	2	15
9 to 10	12	6	6	50
10 to 11	15	10	5	33
11 to 12	5	3	2	40
12 to 13	9	6	3	33
13 to 14	7	4	3	43
14 to 20	37	18	19	51
20 to 30	50	11	39	78
30 to 40	30	9	22	70
40 to 50	25	3	22	88
50 to 60	9	0	9	100
60 to 80	8	0	8	100

TABLE 2. MORTALITY WITH REFERENCE TO SYMPTOMS AND COMPLICATIONS

	Total Cases	Recovered	Died	Mortality Per Cent.
Coma	74	18	56	78
Semi-Coma	53	28	25	47
Stupor				
Drowsiness				
Delirium	49	18	31	63
Convulsions	29	12	17	58
Petechiae	62	26	36	58
Chills	27	8	19	70
Herpes	10	5	5	50
Strabismus	25	13	12	48
Ptosis	1	0	1	100
Panophthalmitis	2	0	2	100
Iridocyclitis	1	1	0	0
Nystagmus	11	7	4	36
Arthritis	1	0	1	100
Deafness	21	19	2	9
Supp. Otitis	1	1	0	0
Neg. Brudzinski	11	3	8	73
Neg. Kernig	12	3	9	75
Extreme				
Opisthotonus	36	29	7	19
Slight Retraction	219	94	125	57
Bulging Fontanelle	6	1	5	83
Normal Fontanelle	2	1	1	50
Previous Trauma to				
Head	9	4	5	55
Multiple Cases in				
One Family	11	8	3	27
Hemorrhagic Ne-				
phritis	1	1	0	0
Abscess at Sight of				
Puncture	2	0	2	100

Again, as in the previous report, the patients brought to the hospital in coma showed a high mortality, namely 78%, as compared with those designated as semi-comatose, stuporous, or drowsy, whose mortality was 47%, and the delirious patients who showed a mortality of 63%.

Convulsions occurred in 29 patients and the death rate among this group was about the same as the general mortality, 58%.

In 32 patients, 18.3% of the total, petechiae

1. A clinical study of Meningococcus Meningitis. Amer. Jour. Med. Sci. January, 1930. No. 1, Vol. CLXXIX, P. 82.
2. Aht's Pediatrics, Vol. VI, P. 423.

were present. This was usually a general skin manifestation with lesions on the chest, abdomen, and extremities, but occasionally very limited in their distribution. It is extremely interesting to note that the death rate in this group is the same as the general mortality in contradistinction to the prevalent idea that these cases offer a much more serious prognosis than cases without a hemorrhagic tendency. In the previous series, among 28 cases with petechiae there was a mortality of 64.2%.

The gravity of the occurrence of chills as a symptom in cases of meningococcus meningitis is also to be noted. Patients with this part of the picture died in 70% of the cases.

Of unusual interest, and what seems paradoxical to everyone who is at first confronted with this information, is the fact that the more severe the opisthotonus the better the prognosis. It has been a very common observation that patients with arching of the back and retraction of the head resembling the arch of a rainbow usually were lucid during their illness, responded exceedingly well to therapy, and most commonly recovered. Of 36 patients described as in extreme opisthotonus, 29 or 81% recovered. On the other hand, 219 patients reported as showing slight retraction of the head showed a mortality of 57%.

In our regular rounds in the meningitis wards it was interesting to see how often the supposition, "the more extreme the opisthotonus the better the prognosis" was true, and supervising nurses and internes soon took hold of this observation and verified this statement themselves.

These patients are usually clear mentally because of the greater limitation of the exudate to the base of the brain and the relative or complete freedom of the cerebral hemispheres from pus. The degree of opisthotonus is in a measure proportionate to the basilar involvement.

Negative Brudzinski and Kernig signs were observed in 11 and 12 cases respectively, and usually in the more severe cases as evidenced by the mortality of 75%. This is clarified still further by the presence in this series of twelve patients under one year of age where the mortality is high and it is a well known fact that definite meningitic involvement may be present without either the Kernig or Brudzinski tests

being positive. Only one-half of these negative cases occurred in patients over one year.

Bulging fontanelle was observed in six infants and five of these died, a mortality of 83%. Normal fontanelle was present in two infants only one of whom died.

Previous trauma to the head or spine within ten days prior to the onset of epidemic meningitis was discovered in nine instances, five of whom died, a 55% mortality.

Of the eleven multiple cases only three, or 27% died. This was undoubtedly due to the fact that medical advice was sought early, because of the previous and usually very recent experience.

Herpes was present in only ten patients and was equally distributed in fatal and recovered cases.

Strabismus was observed in 25 patients, 13 of whom recovered, a mortality of 48%. This was a definitely transitory complication for in each case in which this complication occurred, a re-examination six months after discharge from the hospital revealed the return of normal function of the extrinsic eye muscles.

Deafness was discovered in 21 patients, 19 of whom recovered, leaving a very low mortality of 9%. This deafness was usually bilateral and only occasionally unilateral. The patient's hearing was completely lost due to nerve destruction and in practically all cases was permanent.

The number of cases of deafness would undoubtedly have been higher if many of the several cases that died earlier in their stay in the hospital had survived. Many of these patients remained in coma during their brief hospital residence and hearing tests were impossible.

Suppurative otitis media was extremely rare. It occurred in only one patient and that patient recovered.

TABLE 3. MORTALITY ACCORDING TO DAY OF ILLNESS ON ADMISSION

Day of Illness	No. of cases	Recovered	Died	Mortality Per Cent.
1	42	17	25	59
2	84	37	47	56
3	59	30	29	49
4	37	14	23	62
5	25	15	10	40
6	4	3	1	25
7	11	4	7	63
8	1	0	1	100
9	1	0	1	100
10	5	3	2	40
12	1	0	1	100
15	1	0	1	100
20	1	1	0	0

From a study of table 3 it is quite apparent that the day of illness when treatment is begun is not as important a factor as might be imagined for a high mortality occurs in those patients who enter the hospital during the first two days of their illness. The mortality is considerably lower among those patients who have their specific treatment begun on the third, fifth or sixth day of the disease. This statement is contrary to all the laws of therapeutics but is probably explainable by the fact that patients who are sick enough to seek medical aid early in the course of their illness are the ones with the severest types of infection. They therefore have a poorer chance of recovery than those who show fewer manifestations of the disease and remain at home either under the care of relatives or unsuspecting medical men who are treating the patient for a "stomach upset" or the grippe. The patients in the latter group have a milder type of infection and even though treatment is started later in the course of their illness they have a good chance for recovery. In fact, some of these patients may recover without any specific treatment.

The average stay in the hospital of recovered cases was 23 days.

TABLE 4. STAY IN THE HOSPITAL OF RECOVERED CASES

No. of Days	No. of Patients	No. of Days	No. of Patients
8	1	27	7
9	2	28	6
10	2	29	2
11	3	30	9
12	6	31	1
13	6	32	3
14	5	33	1
15	10	34	2
16	8	35	7
17	4	36	1
18	6	38	3
19	7	39	1
20	2	40	2
21	4	41	2
22	3	43	2
23	9	44	1
24	4	45	1
25	5	46	1
26	6		

The shortest period in which a patient was discharged as cured was eight days, and the longest period was forty-six days. The greatest number of patients, however, left the hospital on the fifteenth and sixteenth days which may be considered a fair average for uncomplicated cases.

It is a well known fact that the meningococcus is less abundant in the spinal fluid of a case of

epidemic meningitis than in a parallel case of suppurative meningitis caused by the streptococcus, staphylococcus, or pneumococcus, but if a careful search is made in a smear of the fluid obtained at first spinal puncture, i. e. before serum administration, the meningococcus should be discovered in about 90% of the cases. Culture of the spinal fluid soon after removal, or still better, collection of the fluid directly from the needle onto the culture medium will bring this percentage up much higher.

The average cell count in the cerebrospinal fluid on admission was 10,546. The lowest count was 600, and the highest 74,000. There were only six counts under a thousand, and four over 50,000. The differential cell count in every instance was recorded as polymorphonucleosis ranging from 75 to 95%.

In almost every case the spinal fluid was cloudy on first examination varying in degree from faint cloudiness to a thickly purulent material that scarcely ran through the needle. Occasionally the fluid was barely detectable as cloudy with a cell count of 600 or 700, but after the serum administration and further development of the meningitic picture, the fluid became definitely cloudy and the cell count mounted to the thousands. The globulin tests were universally positive.

The blood showed a leucocytosis in every case in which it was examined, the average being 18,070. The lowest white count was 9,600 and the highest 60,000.

Antimeningococcus serum of the polyvalent variety was used in the treatment of these cases. No difference was found in the therapeutic value of any of the brands employed. The occasional run of satisfactory or unsatisfactory results was attributed more to the virulence of the epidemic organism at a given time than to the efficacy or inadequacy of the serum used. Occasionally, improvement was not apparent until a change was made from one brand to another, but this was considered accidental.

A truism may be applied to the therapeutics of cases of meningococcus meningitis, namely; "if you don't get drainage you can't get recovery." This is well substantiated by our results and caused us to immediately resort to cisterna punctures when drainage by spinal punctures was becoming inadequate. The amount of drainage

necessary varies with the age of the patient and is roughly 15 to 25 c.c. from one to five years of age grading up to 40 or 50 c.c. in adults. This is again proportionate with the amount of serum administered intra-theccally, namely 15 c.c. to children under five and averaging up to 30 c.c. in older children and adults.

The average amount of serum used in recovered cases was 188 c.c. intra-theccally. The smallest amount in a case that recovered was 30 c.c. intraspinally in two administrations. The largest amount used was 645 c.c. In ten instances 60 c.c. or less was sufficient to effect a cure.

The routine of daily intra-theccal injections of serum was carried out, the administrations usually being 5 to 15 c.c. less than the amount of fluid withdrawn. This was continued until the fluid became clear with a diminution in the cell count to a few hundred. Daily spinal puncture drainage was continued, however, until the pressure returned to normal and the cell count returned to 100 or less.

If this routine is followed less likelihood of recurrences is present. The idea that serum administration may be responsible for a continued cell count in the thousands is not upheld. Any cell count of that degree is definitely indicative of the continued presence of active infection and treatment should be continued. The irritative reaction of excessive serum may be responsible for a cell count of a few hundred but hardly of a few thousand.

Too early discontinuance of serum therapy is a grave error. In summary, intra-theccal serum injections should be continued until the spinal fluid becomes clear and the cell count is reduced to 100 or less with the subsidence of meningitic symptoms and the absence of temperature.

If fever and meningitic symptoms persist in spite of clear spinal fluid, daily spinal drainage should be resorted to until the patient is clinically well. Any clouding of the spinal fluid or substantial increase in the cell count calls for re-institution of intra-theccal serum therapy.

The average number of spinal punctures was 8.9 in recovered cases. The smallest number was one, and the greatest twenty-nine. Out of 146 recovered patients, sixteen required three or fewer spinal punctures.

Cisterna punctures have a definite place in the therapy of meningococcus meningitis. Our

routine was to perform spinal punctures as long as adequate drainage was possible by this means and the performance of cisterna puncture when sufficient fluid for one reason or another, was not obtainable by the lumbar route. This procedure was extremely practical in cases of marked opisthotonus where sufficient arching of the back was not possible for the performance of a lumbar puncture.

Total cisterna punctures on recovered patients was 279 which were performed on forty-eight individuals, an average of 5.8% per patient.

Total cisterna punctures on fatal cases was 126 performed on 38 patients, an average of 3.3 per patient. Ten more patients recovered after cisterna punctures than died.

Intravenous antimeningococcus serum was administered to forty patients in one or two 15 c.c. injections, the first on admission, and the second injection one to fourteen days later. The mortality in this group was 65%.

The efficacy of this form of therapy must again be questioned for in this series as in the previous one the same relative increase in mortality occurred, namely eight per cent. over the general mortality.

The patients that received intravenous therapy were chosen at random, i.e. not only the extremely sick patients received the intravenous serum.

The therapeutic value and the rationale of this treatment is very much doubted even in cases seen early that have an unquestionable meningococcemia. The presence of the meningococci in the blood is usually short for their choice of tissue habitat is the meninges. When they have implanted themselves in the meninges intratheccal therapy is the one of choice. Patients with petechiae are very likely to have a positive blood culture, but they respond very well to intraspinal therapy alone. Sudden deaths and severe anaphylactic reactions nearly fatal have been noted too frequently to allow the recommendation of intravenous therapy to go unchallenged. This is more likely to bring about unfavorable results if the intravenous injection is given a few days after intratheccal therapy was begun. Three patients in this group had violent reactions following intravenous injections. A description of one as given by the interne follows: "The patient was given 20 c.c. anti-meningococcus serum in-

travenously. The warmed solution was given slowly but was followed by marked shock and collapse with apparent respiratory paralysis. Breathing verged on the Cheyne-Stokes type and the face became markedly cyanotic. The treatment consisted of external heat, reverse Fowler's position, adrenalin mins. 5 intravenously, and mins. 10 subcutaneously. Atropine grain 1/100 and camphor 1 c.c. hypo at fifteen minute intervals. Then adrenalin mins. 15 every two hours for six doses. The patient finally recovered."

If there were clinical evidence of the value of intravenous therapy in meningococcus meningitis such arguments would not be decisive but our figures show an increase rather than a decrease of mortality in the cases that receive intravenous anti-meningococcus serum in addition to intraspinal injections.

In this series there were fourteen recurrences of the meningitic picture with secondary clouding of the spinal fluid. There were two cases on the 11th day, two on the 13th day, two on the 15th day, one on the 19th, two on the 21st, one on the 22nd, two on the 23rd, one on the 31st, and one on the 50th day after the initial onset of the disease.

Eight of these patients subsequently died, a mortality of 57%.

RECURRENCES

Day	Secondary cell count	Recovered	Day of Recovery	Died	Day of Death
11	32,000	0	..	1	38
11	.....	..	..	1	25
13	2,925	1	45	..	..
13	.....	1	35	..	..
15	7,200	..	..	1	..
15	.....	1	38	..	..
19	.....	..	..	1	26
21	4,200	1	43	..	..
21	.....	..	..	1	32
22	10,000	1	27	..	..
23	.....	..	..	1	..
23	.....	..	..	1	31
31	.....	1	50	..	..
50	.....	..	..	1	..

Recurrences will be detected much earlier if spinal puncture is resorted to immediately if there be a secondary rise of temperature and return of rigidity of the neck, Kernig and Brudzinski signs. A discovery of reclouding of the spinal fluid and increase in cell count calls for another intensive course of intrathecal therapy until the spinal fluid is clear again.

Sixty of the recovered patients were re-examined two to fourteen months after discharge from

the hospital. Of sixty patients, 31, (53.3%) were entirely free from complaints and two patients described their general well-being as better than before the advent of the attack of meningitis. In my previous series 55.7% were symptom free.

Deafness was the outstanding sequela, which occurred in 14 cases, (23.3%). In the previous series this figure was 25.4%. Five of these cases were unilateral, and nine bilateral. Strangely enough, as reported before, there were again three patients who developed their deafness three months after discharge from the hospital. These were all bilateral cases whose hearing had been perfect when they left the hospital.

Satisfactory explanation of this strange observation is not at hand, but theoretically it could be due to degeneration of the eighth nerve caused by scar tissue contraction at the point of passage through the meninges.

The deafness following meningococcic meningitis is usually a nerve deafness, and with this nerve destruction hope for the recovery of hearing is despaired of.

Six patients complained of occasional headaches but none of these were ever severe enough to interfere with daily activities and some may have been on a psychic basis.

No instance of permanent strabismus was discovered in this follow-up series although there were thirteen recovered patients who developed strabismus. As in the previous series this proved to be a temporary complication.

Five patients had gained weight within a few months after discharge from the hospital, and one had lost weight. Only one complained of poor appetite. Five were slightly irritable since the attack of meningitis. One child was mentally dull since the illness, and one showed an improved mentality. Two told of occasional attacks of dizziness. Three complained of occasional lumbar pain.

None of these complaints were severe except those referable to deafness.

SUMMARY

Three hundred thirty-eight consecutive cases of meningococcus meningitis are reported with reference to mortality according to age, color, day of illness on admission, clinical picture, type of

treatment, the prognostic significance of certain symptoms and complications, laboratory findings, and the reports of re-examinations made months after the patient's discharge from the hospital.

The great similarity in the observations made on this group of patients and those in the previous series is to be noted. Special emphasis is made on the observation that the patients with extreme opisthotonus seemed to have a better chance for recovery than those with only slight retraction.

The apparent futility and the accompanying dangers of intravenous anti-meningococcus serum therapy is again noted.

310 S. Michigan Avenue.

DISCUSSION

Dr. Gerald Cline, Bloomington: It seems as we all plow through the realms of medical practice, we through time, learn to accept and base our opinions a great deal upon statistics. Dr. Borovsky has given us an unusual paper in that he is able to report over three hundred cases of meningitis, which is a great many more cases than the average man will see in a life time.

I was interested to know that his cases showing petechiae gave a bad prognosis, and that those with more pronounced signs of opisthotonus gave a better prognosis. Certainly these two findings are valuable to us all. His statement that the use of different sera seemingly did not show any advantages in the management of his cases also agrees with my meager experience.

We have all thought and been taught that seldom does more than one case appear in the same family. I am sure this is comforting to us as physicians.

We men in the smaller communities have quite a different problem to face in the diagnosis and treatment of such cases. We are not equipped with contagious hospitals. Everyone in the community usually knows the patient; has a fear of the disease, and naturally if the patient is on the floor of the hospital with other cases, no matter how well isolated, he is as foreign as a case of leprosy and is a detriment to the hospital financially. Therefore, most of our cases have to be managed at home, where it is nothing to do a spinal puncture by flash or lamp light and with no competent help. The fluid then has to be brought into town to the hospital for analysis. Most hospitals can not afford, because of the infrequency of the work, to be equipped for cultural laboratory methods.

I agree with frequent multiple drainages and administration of serum and particularly believe it is very important not to stop the drainages too soon. Again as stated before we lack laboratory facilities and, therefore, I feel better if I drain them a few times more than necessary rather than not enough. Also, I feel complications are less in these cases.

Serum reactions which Dr. Borovsky did not men-

tion, but I am sure he encounters, are sometimes quite a disturbance to us in small community practice where we do not have internes and nurses to help us with our cases.

I want to mention one case I had of chronic or recurrent meningococcus meningitis. The child was sick a year before with what sounded to me like mild symptoms of cerebral irritation; with headache, vomiting, backache, etc. No diagnostic spinal drainage was done and with ordinary symptomatic treatment he apparently made a good recovery. When he came to see me he again had mild symptoms comparable to the history of those of last year. My diagnostic fluid showed a high cell count and meningococci (gram negative) on direct smear. I immediately started serum treatment which I feel sure was responsible for an unexpected death, preceded by signs and symptoms of an acute flare up. Another specimen of fluid was sent to a Chicago laboratory and report returned negative for meningococci. Finding myself in quite a difficult situation with the parents, fluid was sent to another laboratory which agreed with my original diagnosis. Postmortem finding revealed an old chronic inflammatory process of the meninges with adhesions. I relate this case to show how questionable laboratory reports can make life very uncomfortable to you as the physician. I suppose my treatment and removal of fluid released some old adhesions, causing an acute flare up.

Again, I enjoyed this unusual paper and congratulate the author. He has brought us a valuable and timely paper.

Dr. W. L. Crawford, Rockford: I want to discuss one point that Dr. Borovsky brought out about getting spinal fluid with a negative report on meningococci and then having the patient develop definite positive spinal fluid symptoms. In connection with his statement about petechiae and pneumococci, I remember the remarks made by Stafford McLane a couple of years ago when he gave a number of case reports where he had done an early spinal puncture and had normal cells and a negative culture. During the period of meningococcemia, where the germs were circulating for several days, in a series of from 25 to 50 cases where they had taken blood cultures from the petechiae, they got better than 50 per cent. positive cultures from these spots during the period when spinal fluid was negative. This corresponds with the high percentage of blood culture that Dr. Borovsky brought out. Keeping this in mind, then, you can make a positive diagnosis in a number of these cases at a time when it would do the patient a great deal of good and before there is a lot of meningeal involvement.

Dr. M. L. Blatt, Chicago: The subject of epidemic meningitis is one of sufficiently serious import to be worthy of additional discussion. Since the epidemic reported from Indianapolis, three years ago, the middle west has seen a larger number of cases than were reported during a number of preceding years. This unfortunately is continuing at this time. It is important that every physician recognize that we are in a period

of high incidence of epidemic meningitis. Knowing this, he is on the look-out for disease and picks up some of the cases which might otherwise be undiagnosed or diagnosed late.

I want to emphasize that even with the most typical cases the first spinal puncture may be absolutely negative. I have seen three such cases. One clinically typical case went on to death because the diagnosis was not made by the first physician to make the first spinal puncture. The fluid was clear. The case was not treated and 24 hours later when the spinal fluid was crowded with meningococci and pus cells, serum proved unavailing. The presence of a large number of pus cells is sufficient indication for a probable diagnosis and the use of antimeningococcic serum is indicated. The spinal fluid may be clear although the cultures frequently are reported as positive for meningococci after 24 hours incubation. As regards treatment, I have recently seen two children come into the hospital with no cerebral symptoms whatsoever. The patients seemed and looked well except for high temperatures and multiple petechiae. These were typical of meningitis in the absence of evidence of endocarditis. Both these patients were treated intravenously with serum. Within 24 hours, one child was entirely well and wanted to go home; the other was apparently entirely well in three days. Intravenous therapy is indicated in such cases as these. Its immediate use is life saving.

Dr. M. P. Borovsky, Chicago (in closing): I want to thank the discussants very much for their interest in this paper.

We do see a large number of serum reactions just as with any foreign protein injection and some of these reactions are quite severe. Some patients develop arthritis and adenitis but they respond in one to three days to adrenalin and ephedrine.

The case that Dr. Cline mentioned of chronic meningitis might have been a recurrence. I had one recurrence as late as seven months after the patient had recovered. It is perfectly possible that there would be a small pocket of infection that is walled off which breaks open and sets up a new infection.

Dr. Blatt's point was very much in order. The early clear fluid is not uncommon. After the first spinal puncture there may be an influx of meningococci, the real spinal fluid picture is set up and the diagnosis can be made very quickly. Surely intravenous therapy is definitely indicated in meningococcemia as Dr. Blatt mentioned. It is only in cases where we have a full-blown typical meningitis that my feeling is that the severe reactions produced are not worth the effect produced by intravenous treatment. I feel that the intravenous therapy, so far as we know, does not do a great deal of good for meningitis. There has been much controversy over that point but when you see patients go into anaphylactic shock from intravenous therapy and when we see cases with petechiae do well on intraspinal therapy alone, we begin to question the value of intravenous treatment along with its possible dangers.

DIABETES MELLITUS AND ESSENTIAL HYPERTENSION.

A THEORY AS TO THEIR ETIOLOGY AND TREATMENT.

JAMES H. HUTTON, M. D.,
CHICAGO.

Our present theories of diabetes mellitus and essential hypertension are not adequate. The pancreatic deficiency hypothesis of diabetes is not supported by clinical and pathological evidence. In hypertension we are practically without a hypothesis. Our purpose here is to present a theory of pituitary and adrenal overactivity as the cause of most cases of diabetes and essential hypertension. It is quite likely that except for Banting's life-saving discovery of insulin the pancreatic theory of diabetes would have been discredited long since by the pathologists.

It is our idea that carbohydrate metabolism is controlled by a balanced mechanism consisting of the pancreas, the pituitary and the adrenals. Hitherto we have not recognized the pituitary and adrenal factors, but we have looked on diabetes mellitus as the result of too little of the pancreatic contribution—hypoinsulinism. Our belief is that it usually results from *too much* of the balancing factors, the pituitary and adrenal secretions, and that the more logical mode of attack is by attempting the regulation or reduction of the secretion of the pituitary and adrenals, the pituitary probably being the primary offender. The fact that insulin relieves the symptoms of diabetes is no argument against the validity of this idea. We are in total ignorance as to how insulin acts and it might as logically be assumed to have a counteractive effect on the pituitary and adrenal secretions. This has already been suggested indirectly by Cushing.^{1a} Furthermore, the fact that Cushing^{2a} relieved a severe and intractable case of diabetes with the x-ray is another bit of evidence in favor of this theory. Our own experience supports this idea.

The method of treatment here suggested offers possibility of control, if not absolute cure, of hypertension, a syndrome, for which up to this time, we could offer not the slightest hope. For diabetics it offers the possibility of an eventual

cure. Even if it does no better than to control it, as insulin does, the patient would still be better off because he would be free from the inconvenience and danger of constant hypodermic medication.

DIABETES

Evidence in favor of the Pancreatic Theory. Removal of the pancreas in experimental animals causes diabetes—post hoc propter hoc reasoning.

Insulin relieves most of the symptoms in the human as well as the experimental animal.

The pancreas is said to be the seat of pathologic changes in the islet tissues.

All other evidence is secondary to these three main pillars.

Evidence against the Pancreatic Theory. There is no distinctive pathological lesion present in the pancreas in the vast majority of cases. It is reported from Departments of Pathology that only rarely is any pathology found in the pancreas.

Anderson³ reports the case of a man, aged 33, who suffered from diabetes for fourteen years and at the age of 33 died from coronary disease with marked arteriosclerosis. The pancreas of the patient appeared normal.

Epstein⁴ says that in patients dying of diabetes mellitus, insulin could be discovered not only in the pancreas but elsewhere in the body and that fatal diabetes mellitus may exist, and yet insulin be present in the body in quantities that should be considered sufficient to prevent hyperglycemia.

Boyd⁵ says: "When a person dies of diabetic coma one might expect to find the same profound pathological change in the pancreas as is seen in the kidneys in uremic coma. Such is not the case. To the naked eye the pancreas usually appears quite normal. . . . I have never encountered a specimen showing any gross change which may not be seen in the non-diabetic. On the other hand, the pancreas may be almost entirely replaced by tumor growth without the occurrence of any symptoms of diabetes.

"The microscopic appearance is also disappointing, although here more definite changes are encountered. A survey of the literature will reveal a great variety of lesions. The fibrosis of chronic pancreatitis may be so extensive that the islets as well as the acinar tissue are destroyed. But diabetes is seldom associated with chronic pancreatitis.

"It is worthy of note that in the notoriously severe diabetes of childhood neither fibrosis nor hyalinization are observed in the islets."

Wullenweber⁶ points out that whenever diabetic symptoms are detected, changes in the pancreas are generally thought of, although it is known that carcinoma and necrosis of the pancreas may exist without causing diabetic disturbances and, on the other hand, glycosuria is often observed in disorders of other organs. He reports one patient with severe diabetes in whom at postmortem bilateral tumors in the suprarenal medulla were found. Another had a large hypernephroma. The pancreas did not show pathologic changes.

Joslin says: "Indeed, one is tempted to wonder whether the changes in the islands may not be the result rather than the cause of diabetes."^b

"One-tenth of the pancreas may, but usually does not, suffice to prevent diabetes. Whatever the process or processes may be which cause diabetes it is justifiable to infer from these experiments of Allen that at least 90 per cent. of the gland's efficiency must be impaired. . . . No single distinctive lesion of the islands was encountered in 26 of my cases reported in the Warren and Root series or in 10 cases of diabetes in children studied by Warren. * * * This was true even of the young uncomplicated cases of diabetes among whom, if among any group, one might expect uniformity of pathological appearance if there were one definite causal agent giving rise to the disease."^c

"We have found no pancreas in this series, no matter how severe the disease process or how marked the changes in the islands, in which a greater or less number of apparently normal islands could not be found. . . . The acinar sclerosis was not apparent in any case much under two years' duration even though the islands showed considerable change."^d

"Warfield makes the statement that to his knowledge 'no case of disease of the head of the pancreas has ever been followed by diabetes.'^e

It is unreasonable to believe that any organ could be so badly diseased as to be responsible for the patient's death without some evident pathology being found at postmortem. This is particularly true of the pancreas of which we are told 90 per cent must be removed in order to produce diabetes in the experimental animal. Curiously, we have tried for forty years to compress our clinical and pathological observations into our conception of the etiology of diabetes. Our pathologists have encouraged us in this futile effort by neglecting to examine the adrenals and the pituitary, two structures that have long been known to be influential in carbohydrate metabolism.

Clinical Evidence. The deficiency idea does not square with common sense or experience.

Hyperparathyroidism is characterized by hypercalcemia, increased excretion of calcium in the urine and by a reduction of calcium in the bones. Diabetes is an almost exact counterpart except that sugar is involved in one and calcium in the other.

The syndrome of hyperinsulinism, first described by Seale Harris,⁷ has been due in only a few cases to tumors of the pancreas. In most instances the pancreas has been normal in gross and microscopic appearance. In one case reported by Winans⁸ the pancreas was only one-third normal size. Microscopically its tissues appeared to be normal. Furthermore, in this case injections of pituitrin relieved the symptoms better and for a longer time than anything else. In others mentioned by Harris⁹ suprarenal gland by mouth relieved the symptoms. Descriptions of some of the cases reported sound like clinical cases of hypopituitarism. Winan's experience in relieving the symptoms by injections of pituitrin strengthens the suspicion that at least some of these owed their difficulty to pituitary deficiency. Hypophysectomized dogs experience hypoglycemic crises like cases of "hyperinsulinism."²⁰

Evidence in Support of the Pituitary-Adrenal Theory. Clinical Evidence. Glucose Tolerance Curve. The present theory is that glucose stimulates the pancreas to increased production of insulin resulting in a decline in the curve to a point below the fasting level. It is just as logical to assume that the pituitary takes care of this load of sugar as rapidly as possible but that the increased exertion causes some exhaustion with the result that the blood sugar falls below the starting point.

Cases of hypopituitarism involving the growth hormone of the anterior lobe frequently show sugar curves that rise slightly or not at all above the fasting level and decline steadily to below 60 mg. at the end of two hours. Cushing¹⁰ first called attention to the increased sugar tolerance of animals having hypopituitarism and clinicians have ever since noted this fact in their clinical cases. Simmonds' disease is characterized by low blood sugar and high glucose tolerance. Gigantism is sometimes accompanied by diabetes.

Rowntree¹¹ quotes Cushing and Davidoff. "They believe that there is ample support for the belief that the

mellurias which occur in about 25% of all cases of acromegaly may be similarly ascribed primarily to the hypophysis. * * * They conclude that the glycosurias accompanying acromegaly are ascribable primarily to the hyperpituitarism. . . . Cushing and his associates believe that the increased rate" (BMR in exophthalmic goiter) "and diabetes mellitus are both due to diseases of the pituitary and can both be adequately treated by partial extirpation of the hypophysis. . . . Borchardt maintains that in 35% of cases of acromegaly, glycosuria is evident, that it is an early manifestation and that later in the disease hypopituitarism replaces hyperpituitarism and that glycosuria disappears spontaneously."

F. N. Allan¹² says: "The incidence of diabetes with hyperpituitarism is certainly too high for such chance relationship. . . . The chief theories which have been proposed in this connection are that excess pituitary secretion may neutralize the effect of insulin or by stimulation of the pancreas lead to its exhaustion."

Fenn and DeTakats¹² noted improvement in carbohydrate tolerance following section of the splanchnic nerve.⁵

Adrenal tumors are many times associated with diabetes.

Worry, fear, anger, excitement, the same factors which stimulate the adrenals, aggravate diabetes, increase blood sugar, sometimes to the point of glycosuria in presumably normal persons, and raise blood pressure.

Female diabetics with ovarian insufficiency have an improved carbohydrate tolerance when their ovarian insufficiency is corrected.

Joslin^{1a} quotes Cushing as saying that "insulin and posterior-lobe extracts have been shown to be, and insulin and anterior-lobe extracts may be presumed to be, counteractive in their effects."

A good many diabetics show evidence of an excess of the growth hormone and a shortage of the sex hormone, that is, they are eunuchoid types of individuals.

Cushing's^{2a} cases of pituitary basophilism showed glycosuria and hyperglycemia and at least one case had a severe diabetes which could not be controlled by insulin and diet. This particular case was relieved by doses of x-ray to the pituitary.

Joslin says:^{1f} "Thirst with a history of being 'a water drinker as long as I can remember' is a symptom not uncommonly volunteered by diabetic patients. This symptom together with the known tendency of diabetic children to be above height for their age at the onset of diabetes, their acknowledged mental procaciousness, the proved development of their bones a year in advance of their age, the peak incidence of diabetes in

children being at maturity, * * * the occurrence of glycosuria in pregnancy, the general frequency of obesity prior to the onset of diabetes in adults, all suggest that the pituitary is concerned in the development of diabetes."

Martin¹³ says that it is plausible to assume that diabetes and acromegaly are related through a hyperfunction of the pituitary with coincident alterations in the pancreas.

Priscilla White¹⁴ says: "The excess growth of our prediabetic patients may well be a phase of pituitary activity. Whatever the explanation may prove to be, it is significant that preceding the onset of diabetes in the child it is the rule to find for the age an excess of height."

Moehlig and Ainslee¹⁵ say: "The pituitary gland, regulating the suprarenal cortex and other mesodermal tissues, plays an important role in the pathogenesis of diseases associated with abnormalities of cholesterol metabolism. Such diverse clinical entities as atherosclerosis, hypertension, certain types of nephritis, disturbances in the volume of blood, cholelithiasis, diabetes and uterine fibroids are found to have important relations to states of pituitary hyperfunction and exhaustion."

Moehlig and Bates¹⁶ record their impression that eosinophilic and basophilic adenoma have some features in common. Hypertension and hyperglycemia, as well as hypertrichosis and polycythemia, are common in both.

Evidence from the Pathologists. Moehlig and Bates¹⁶ say:

"Kraus and Traube examined two hundred and thirty-two pituitaries of persons who had been ill but a short time, so that no change in the pituitary would be expected from the illness. Another group was obtained from persons who had either died by accident or had committed suicide." Among the conclusions were the following:

"Normal persons of hypersthenic habitus show, as a rule, a marked increase of the basophil cells as compared with those of the healthy mesosthenic habitus.

"Persons with diseases which attack, as a rule, the hypersthenic type, such as essential hypertension, vascular sclerosis, contracted kidneys, constitutional obesity and, in a certain degree, chronic alcoholism, progressive paralysis and aortitis of syphilitic origin, show a very high percentage of basophil cells and a marked increase of the basophil cells as compared with the mesosthenic type.

"Persons with high blood pressure, chronic nephritis and so-called secondary contracted kidneys also have a marked increase of the basophil cells as compared with the normal mesosthenic type.

"Asthenic persons, such as the diabetic and the tuberculous types, in whom the blood pressure is low, show a diminution of the basophil cells in a majority of cases. . . .

"As to the relationship between the basophil cells

of the pituitary and the suprarenals, 72.7 per cent. of the persons with suprarenals rich in lipoid (12 Gm. or more) show a marked increase of the basophil cells.

"Our studies on these two hundred and thirty-two pituitaries taken from normal and sick persons permit the conclusion that there is a definite relationship between the basophil cells of the pituitary and the constitutional type of the patient; likewise between these and the blood pressure as well as the state of the suprarenals. In other words, there is a definite relationship between the basophil cells, the constitutional make-up of the patient, the blood pressure and the size of the suprarenals.

"There is, apparently, also a relationship between the basophil cells of the pituitary, the cholesterol content of the blood and the suprarenals. This is important because of the relationship between the cholesterol content of the blood and vascular disturbances."

According to Anselmino¹⁷ and his associates, clinical as well as anatomopathologic observations indicate a relation between the anterior hypophysis and the pancreas. In acromegaly there is frequently a considerable increase in the pancreas, and in young diabetic patients a shrinkage of the eosinophil cells of the anterior hypophysis.

Chiari¹⁸ reports a man who went into coma with a blood sugar of 642 mg. and died. At postmortem the pancreas was found to be essentially normal. The suprarenals were twice as large as normal. The hypophysis was of normal size. There was considerable hyperemia of the anterior lobe. "In the neurohypophysis, particularly in the basal areas attaching to the anterior lobe there were abundant basophilous cells."

In one series of 65 cases of diabetes, 18 showed adrenals weighing 18 grams or more.

Joslin¹⁹ says: "The pituitary gland, according to Kraus, presents certain changes in its anterior lobe in diabetes which are nearly constant in young people. He noted a decrease in the number and size of the eosinophilic cells as well as their degeneration, and the weight of the gland was below normal."

Polycythemia or a polycythemic tendency is common in diabetes.¹¹ Basophilism has a tendency toward polycythemia. Moehlig and Bates¹⁶ showed that the pituitary is sometimes responsible for polycythemia.

Experimental Evidence. Drs. Houssay, Bissotti and Rietti¹⁹ showed that large doses of anterior pituitary extract intraperitoneally injected

in normal dogs on a raw meat diet caused hyperglycemia, glycosuria and an increase in total content of ketone bodies in the urine.

Injections of anterior pituitary preparations cause diabetes in the pancreatectomized dog. They cause thirst and increased fluid intake in other experimental animals.

The anterior lobe is now credited with elaborating a diabetogenic, an adrenotropic and a thyrotropic hormone.²⁰ Dogs without pituitaries suffer degeneration of the adrenals, the gonads, the thyroid and the parathyroids. Dogs receiving pituitary preparations by injections or implantation show an increase in the activity of the adrenals, the gonads and the thyroid.

Raab²¹ noted that the administration of pituitrin led to a decrease in the amount of fat in the liver. A fat metabolism hormone is claimed to have been isolated from the anterior lobe which increases the acetone bodies in the blood.²²

Houssay²³ and his co-workers showed that removal of the pituitary, followed by removal of the pancreas, leaves the animal free from diabetes or having it in very mild form, but extremely sensitive to insulin. Implantation of the anterior lobe causes diabetes in these animals. Barnes²⁴ and Regan in Carlson's laboratory confirmed these results. Their dog could handle normal amounts of glucose without glycosuria.

Barnes, Regan and Nelson²⁵ showed that the administration of amniotin to female dogs prior to removal caused pancreatectomy to be followed by only mild glycosuria. When the injections of amniotin were stopped, the animals became severely diabetic. Resumption of the injections of amniotin caused a reduction in the glycosuria.

Summary. The pancreatic deficiency theory is inadequate. Evidence of pancreatic damage is usually lacking. Hyperinsulinism too usually fails to present evident changes in the pancreas. On the other hand, the association of diabetes with gigantism, acromegaly and tumors of the adrenals and various other clinical, experimental and pathological data very strongly suggest, if they do not actually prove, that insulin and the pancreas are but one side of a balance and that the usual cause of diabetes is an over-abundance of the pituitary and adrenal secretions.

HYPERTENSION

At the present time as regards essential hypertension we are without hypotheses as to cause or hope as to cure of this condition. It is my belief that the evidence in the literature is practically conclusive as to the part played by the pituitary and adrenals in this condition. At the same time, evidence in the clinical literature justifies the hope that we have in radiotherapy an agent which will control and possibly cure many cases. The following pages are devoted to assembling some of the most important bits of evidence, particularly as to the cause of this condition.

Many years ago it was suggested that the excessive use of table salt had something to do with causing or maintaining hypertension. Salt restriction is still an orthodox measure in the treatment of hypertension. It has been shown that the adrenals are very influential in, if they do not actually control, sodium metabolism.²⁶ Harrop et al²⁷ have shown that cases of Addison's disease do very much better on a heavy intake of salt. Many patients with hypertension are heavy salt eaters.

Adrenal tumors are frequently associated with hypertension. French workers²⁸⁻²⁹ are reported to have x-rayed the adrenals successfully for the relief of hypertension.

W. Laudon Brown³⁰ states that in the earlier stages of acromegaly in association with hemianopia, lowered sugar tolerance and osseous hypertrophy, the blood pressure is high whereas in the latter stages with a high sugar tolerance, blood pressure is low.

Simmonds disease (destructive lesion of the anterior lobe) is associated with low blood pressure.

Toxic adenoma of the thyroid is frequently associated with hypertension. A thyrotropic hormone has been isolated from the anterior lobe of the pituitary.

Arn³¹ has denervated the adrenals for the relief of hypertension.

Victims of hypertension are afflicted with headaches, the cause of which has never been explained. Measures which presumably influence pituitary function relieve the headaches.

Cushing's³² cases of basophilism exhibited hypertension. In one case this was relieved by x-raying the pituitary.

The adrenals are dependent upon pituitary function as evidenced by:

The adrenotropic hormone isolated from the anterior lobe.

Degeneration of the adrenals after hypophysectomy.

Repair of this degeneration by pituitary transplants.

Herrick³² describes the victims of hypertension in the same terms that an endocrinologist would use in describing an individual who had an abundance of pituitary and adrenal hormones.

Alvarez³³ says that the influence of sex is hardly recognizable in childhood; that it becomes exaggerated about the age of puberty and again in women about the menopause. "It is suggestive also that in young women there seems to be a high degree of correlation between the incidence of hypertension and the presence of the various symptoms and signs of ovarian hypofunction. It would seem that the internal secretion of the ovary is able in some way to suppress the tendency to hypertension which many of the girls presumably inherit equally with the men." Other writers³⁴ have expressed similar opinions. The sex hormone tends to suppress pituitary functions.

"Riesman³⁵ * * * emphasizes the importance of recognizing a variety of non-nephritic hypertension occurring often in women past middle life who are obese, undersized, ruddy complexioned and possessed of considerable mental and physical energy, without demonstrable arterial or renal abnormalities. The men of this group are apt to be deep chested, robust and great expenders of energy."

Goldzieher^{36a} says: "The relation between the climacterium in women and hypertension is also striking and many theories have been built up on the conception that functional disturbances of the ovary and hypertension are closely connected. The frequency of hypertension in artificially sterilized women is particularly noteworthy and so is the coincidence of myoma and hypertension."

Fluhmann's³⁷ findings of an excess of the anterior pituitary sex hormone in women past the menopause helps to explain Goldzieher's observation.

Ten years ago Marañon³⁸ opined that the adrenals took on added activity at the menopause and that the body became more sensitive to adrenalin.

Some cases of hypertension are relieved by injections of corpus luteum. It is admitted by the

experimentalists that corpus luteum depresses pituitary function.

Gutman³⁹ says: "During the past few years I have been able to conclude from the observations made in the study of women of the essential hypertension type that they were all in reality pituitropic individuals. * * * In others who suffered cardiorenal complications, the adrenal markings appeared to be predominating."

Goldzieher^{36b} says:

"1. Phaeochrome tumors are apt to cause hypertension, vascular crisis, heart hypertrophy and vascular changes.

"2. In hypertension, particularly if arterio—or nephro-sclerosis has developed, usually large adrenals are present, which most frequently show characteristic gross and microscopic changes.

"3. The adrenalin content of the adrenals in hypertension is increased even if manifest enlargement should be absent.

"4. Essential hypertension is characterized in the beginning by its lability, based on a varying adrenalin output from as yet but functionally altered adrenals. If the hypertension becomes permanent, organic changes of the adrenals have been established already which make the hyperfunction of the adrenals a constant one.

"5. Other symptoms of increased sympathetic tonus, such as hyperglycemia, decreased glucose tolerance and glycosuria, are often prevalent in hypertension. The complication with diabetes is common. All this is well in keeping with the supposed adrenal hyperactivity.

"6. Cholesterolemia is another feature of hypertension. Adrenal function is instrumental in the regulation of cholesterol. Hypertensive arterial disease is characterized by cholesterol deposits, and on the other hand experimental cholesterol over-feeding will yield severe arteriosclerosis which is comparable to that in humans.

"7. All the factors which are known to be responsible for the etiology of genuine hypertension are also known as stimuli of adrenal activity.

"8. Adrenalin is the physiological stimulus of the sympathetic vasoconstrictor system and its cortical antagonist, cholin, is that of the depressor vagus system.

"9. Injection of adrenalin in sufficiently large and repeated doses is toxic and produces severe arterial changes. * * * Proper dosage will yield changes comparable to those in human arteriosclerosis.

"10. Retention of N waste products in the renal form of hypertension stimulates the adrenals, the function of which, as shown by N retention after adrenalectomy, is that of enhancing kidney excretion. This is achieved by the specific effect of adrenalin upon the efferent glomerular vessels. Hence the hypertension in renal insufficiency is of a compensatory nature and is attained through the mediation of the adrenals.

"11. Experiments have proved that resorption of kidney parenchyma, such as is supposed to occur in the so-called contracted kidneys, elicits adrenal hyperactivity and yields adrenal hyperplasia. Hence primary renal hypertension might change into or combine with essential hypertension."

Moehlig and Osius⁴⁰ fed their animals a high fat diet and injected pituitrin daily. Pronounced arteriosclerosis and marked hyperplasia of the adrenal cortex occurred in 100 days. The most frequent complication in diabetes is arteriosclerosis. Diabetics get a high fat diet. If they are receiving an excess of the pituitary hormone, their arteriosclerosis could be explained on the basis of this experimental evidence.

Cushing^{2c} expressed the opinion that all known primary pituitary disorders cause marked secondary changes in the adrenal cortex.

Laroche⁴¹ concludes that the cortical substance of the adrenal glands produces cholesterol and regulates its content in the blood.

Goldzieher^{36c} says: "Autopsy findings in human hypertension on the other hand often reveal an increase in size of the cortex due to an excess of its lipoidal content."

"The intimate correlation between lipoid metabolism, adrenal cortex, and atherosclerosis is striking, although its mechanism is far from being clear. The cholesterol disturbance in atherosclerosis and its relationship to the changes of the adrenals has closed the ring of evidence which seems to prove that adrenal hyperfunction is among the most important factors in atherosclerosis."^{36a} * * *

Chabanier and Truchot⁴² report improvement in hypertension with functional and anatomical symptoms of dilatation of the left heart after treatment with a pancreas extract. This was an insulin-free extract which was isolated independently by the French and Germans. The mechanism for its action might easily be a suppression of pituitary and adrenal function.

Eisenberg and Wallerstein⁴³ say that hypertension is probably "the most important condition coexisting with pheochromocytoma. Of 53 cases 25 (47%) showed the association with hypertension. * * * While in some cases of tumor of the suprarenal cortex hypertension was continuous, in a large majority of the cases of tumors of the suprarenal medulla in which it was present, it was a paroxysmal type. * * *

"Peyron thought that the reason why hypertension is paroxysmal in the case of pheochromocytoma is that the intense proliferation and death of chromaffin cells interfere with the regular and complete secretion of epinephrine and that as a result of this, many proepinephrine and para-epinephrine particles get into the circulation and thus for the time being there is no hypertension.

"We are therefore confronted with the fact that in some cases of tumor of the suprarenal cortex and in most cases of those of tumor of the medulla * * * there is either paroxysmal-intermittent or continuous hypertension, and that very frequently removal of the

tumor is followed by restoration of normal blood pressure."

Evelyn Rogers⁴⁴ cites a number of cases characterized by attacks of malaise, pallor, coldness and vasoconstriction of the extremities, sensation of epigastric constriction, with nausea and vomiting. During these attacks the blood pressure doubled. One man died with a clinical diagnosis of Graves' disease, chronic nephritis and hypertension. Autopsy showed normal thyroid and kidneys, generalized arteriosclerosis and a pheochromocytoma of the right suprarenal medulla. Another case with paroxysms of hypertension was relieved by radiotherapy to the lumbar region. He finally died in a condition resembling uremic coma. Autopsy showed a paraganglioma of the right suprarenal. The kidneys were normal.

In 1919 Neubauer⁴⁵ noted the association of hypertension and hyperglycemia and offered the theory that excessive activity of the suprarenals was the underlying factor. O'Hare⁴⁵ in this country noted that in one-fourth of the cases of hypertension without apparent kidney lesion there was definite hyperglycemia. He also noted that hyperglycemia was rare in cases of hypertension associated with a definite kidney lesion.

Kerppola⁴⁶ examined 31 cases of essential hypertension and found the sugar tolerance lowered in 80 per cent. and alimentary glycosuria present in 25 per cent.

Goldzieher^{36c} says: "In brief the writer claims that Volhard's arterial spasm or Munk's undefined 'hematogenous' hypertension is nothing else but a symptom of overactivity of pressor endocrines and particularly of the paheochrome system. I wish to state emphatically that I do not identify hypertension with mere hyperadrenalinemia although adrenalin is the most powerful of the physiological pressor substances. There are other pressor hormones to be reckoned with, such as those of the pituitary and thyroid."

Cecil,⁴⁷ discussing hypertension, obesity, virilism and pseudo-hermaphroditism, says: "Of particular interest is hypertension. * * * It is not usually of the paroxysmal type but the blood pressure is constantly high. * * * Cortical tumors have been reported, particularly in men, in which the only symptom was hypertension."

Langeron and Loheac⁴⁸ conclude that primary tumors of the suprarenal gland may explain the pathogenesis of apparently primary or essential hypertension. One type consists of paroxysmal hypertension and is associated with paragangliomas. A second type of continuous hyperten-

sion may be caused by epitheliomas of the suprarenal cortex. Other writers⁴⁹⁻⁵⁰⁻⁵¹ have commented on the relationship between adrenal tumors or hyperplasia and hypertension.

Treatment. It is believed that radiotherapy can restore to more nearly normal levels the function of the pituitary and adrenals. We have consequently used this agent in the treatment of a series of cases of diabetes mellitus and essential hypertension. Regard for the patient's welfare has caused us to proceed more cautiously than will be necessary when the various factors of dosage and frequency of repetition are fully worked out. In spite of this extreme caution our results have been not only interesting but hopeful. All but one case of hypertension have shown a considerable reduction in blood pressure with a coincident improvement in the patient's sense of well being. The diabetics have reported improvement in their sense of well being and the insulin requirement of some has been materially reduced.

Summary. At present we have no adequate hypothesis as to the cause of essential hypertension. The changes found in the pituitary in cases of hypertension, chronic nephritis and secondary contracted kidneys mentioned by Kraus and Traube, the occurrence of adrenal pathology in cases of hypertension and arteriosclerosis, the occurrence of identical sugar curves in diabetes and essential hypertension, the relief of hypertension by x-raying the adrenals, and other data point to hyperfunction of the pituitary and adrenals as the most likely cause of this condition and suggest a method of treatment.

The writer is conscious of the fact that this announcement may be regarded as premature. His defense against this charge is that if the theory and treatment are wrong, the more men who work on it, the sooner will the error be discovered and the entire matter be discarded. If it be correct, the more minds that are brought to bear on it, the sooner will the complete details be worked out and the treatment be made available to the general profession.

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THE TREATMENT FOR GENERAL PARESIS BY MEANS OF THE ELECTRIC CABINET, ARSENICALS AND TYPHOID VACCINE*

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AND

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KANKAKEE, ILL.

In a preliminary report¹ the use of an electric cabinet in the treatment for general paresis was described. To date over five hundred treatments by the use of the cabinet have been given with

results which encourage us in the belief that this form of treatment is a valuable and efficient method of treating general paresis, and the allied conditions, such as central nervous system syphilis.

A description of the cabinet according to the original report follows: "The cabinet is constructed of 24 gauge galvanized iron. The outside dimensions of the cabinet are: length 60 inches, width 28 inches, and the center height is 26 inches. The center inside height is 24 inches, and the sides are vertical for a height of 14 inches, and then curved gradually to the center. One end of the cabinet is closed by a galvanized iron end section "double-sealed" to the main body of the cabinet. This provides additional construction strength and also aids in conserving the heat generated. The other end of the cabinet is open, and has a 1/4 inch rod rolled into the outside of the cabinet. This end is so arranged that the blanket draped about the shoulders and neck of the patient may be fastened by means of clamps attached to the curved rod.

"For the sake of smoothness and strength of construction the bottoms of the sides and the end are rolled inwards in a one inch roll. Inside of the frame are three grooved, wooden ribs which follow the curve of the cabinet. The end ribs are placed 10.5 inches from the ends and the center rib 19.5 inches from each end rib. Wires insulated with asbestos are placed in the grooved ribs and lead to the electric sockets which are located on the sides of each rib. Four such sockets occur on each side of the ribs, giving a total of eight lights per rib, and a total of twenty-four lights. The lights are placed in a series of twelve each, which permits the use of a greater amount of heat in producing the desired temperature and of a lesser amount of heat to maintain a given temperature with comfort to the patient. The lights are controlled by two switches on the outside of the cabinet, one for each series of lights."

The only alteration which has been made to the original cabinet consisted in moving the switches controlling the electric lights from the top to the side of the cabinet. This change facilitated the manipulation of the control switches.

Although no exact routine for the treatment of every patient can be formulated, the following

*From the Kankakee State Hospital.

procedure is the one generally used in starting treatment on a new patient, whose reaction to external heat is not known. The cabinet is so constructed that it rests on the hospital bed, and can be lifted on or off the bed at will. Prior to the placing of the cabinet on the bed, the bed is prepared by placing a rubber sheet over the mattress, and placing cotton sheets over this.

The patient is placed on the bed, completely undressed, and covered only with a cotton sheet, and then the cabinet is placed over the patient, and it rests on the bed. Five or six woolen blankets are laid over the cabinet and another blanket is draped snugly over the open end of the cabinet, and about the shoulders and neck of the patient.

All of the lights in the cabinet are turned on and kept on until the patient's axillary temperature reaches 101 F. degrees. Then one-half of the lights are turned off. When the temperature reaches 102 degrees, the remaining twelve lights are turned off. The patient remains in the cabinet just as if the lights were on, and in practically all cases the axillary temperature rises to 103-104 degrees, and stays at this level for several hours. When the temperature recedes to 101 degrees, the cabinet is removed and the patient is placed in a dry bed. All temperatures are axillary and are taken every fifteen minutes during the treatment and until the patient's temperature has dropped to 101 degrees. Thereafter temperature readings are taken every half hour until a normal reading is reached.

In practically all cases a temperature of 102 degrees is reached in one and one-half hours, but a variation of a half hour either way is observed in some cases.

The first treatment is started at eight o'clock in the morning, and the temperature is 102-103 degrees, and the lights turned off at about ten o'clock A. M. Usually the height of the patient's temperature is reached at noon, and following this there is a gradual decline and at about two o'clock in the afternoon the patient is placed in a dry bed, and by five the temperature is back to normal.

During the first treatment, as well as in subsequent ones, the patient's reactions are closely watched and the procedure for other treatments is planned to suit individual responses.

The second treatment is carried out in a simi-

lar manner to the first, except that one-half of the lights are turned off at 102 degrees, and all when the temperature of the patient reaches 103 degrees.

The patients who responded satisfactorily during the first and second treatments, i. e., were quiet and cooperative, had a temperature reading of 103-104 degrees in two to three hours, and whose temperature did not rise over 105 degrees, are given all subsequent treatments according to the following procedure: All of the lights are kept on until the patient's temperature reaches 104 degrees and then half of the lights are kept on until the temperature is 105 degrees. The temperature of the patient continues to rise to 106-106.4 degrees and remains at this level for one to two hours. Then the temperature is allowed to fall gradually and usually within three hours after it has receded below 106 degrees it is 103 degrees. The patient is placed in a dry bed, as originally described.

If it is desired to maintain the temperature of 106 degrees for a longer time, twelve of the lights are turned on when there occurs a drop of $.2-.5$ degrees and they are kept on until the temperature again rises a fraction of a degree. This procedure may be repeated as often as is compatible with the patient's condition.

All temperature readings are axillary. If any reading seems questionable it is at once checked by a rectal temperature reading. In all cases the axillary temperature is checked by a rectal reading when the temperature is 106 degrees.

A light breakfast is served in the morning. During the treatment water is given freely, and often as high as four liters are consumed. Perspiration is always profuse. The cessation of perspiration is a warning sign of heat prostration, but as yet this has not occurred in the treatments. Should this occur, the patient should at once be placed in a dry bed and treated as the occasion demands.

Some patients become restless and turn from side to side when their temperature readings are at the highest point. Since no harm can result from this, the only precaution necessary is to see that the blankets remain draped about the shoulders. In our experience practically all of the patients cooperated willingly after the fifth treatment. It is not at all unusual to have patients ask for a treatment.

The foregoing procedure has been followed in practically all of the cases treated but it was necessary to modify it for uncooperative, restless patients. In these cases a nurse or attendant was in constant watch and when necessary, held the patient's shoulders while he was in the cabinet. When a patient is restless his temperature usually rises more rapidly than when he is quiet. Hence, there is no need to say that he must be carefully watched. In a few instances, where the patient was exceptionally excited, restless or confused, it was deemed advisable to administer from one to six injections of typhoid vaccine before starting the regular cabinet treatments.

From our experience¹ with typhoid vaccine, we can definitely state that very little lasting improvement can be expected from less than twenty injections of typhoid vaccine. Therefore, any improvement in the patient's condition that was noted after a course of cabinet treatments cannot be ascribed to the results following the initial typhoid vaccine injections.

Also in certain cases, patients were in a poor physical condition on admission. We have pointed out² that the physical health improves

following typhoid vaccine injections. Such patients were also given from two to ten typhoid vaccine injections, and following this they were put on regular cabinet treatments.

In no case has it been necessary to administer a sedative drug.

The usual course of cabinet treatments consists of from twelve to twenty treatments. These are given twice a week for the required number of times. Following this fever therapy, arsenicals or mercury are given weekly for ten weeks. Since January, 1933, the usual arsenical has been in the form of tryparsamide and this is given wherever possible.

If the desired improvement has not been reached following the arsenical or mercury injections, a second course of fever therapy is started.

The patients at the Kankakee State Hospital are classified according to the Statistical Handbook, published by the Department of Public Welfare, State of Illinois, Second Edition.

The following table shows the number and kind of treatments with the classification of the patient and the results of the treatment:

Case Number	No. of Typhoid Injections	Neosalvarsan .9 Grams Dose	Mercury 2 Grain Dose	Tryparsamide	Electric Cab. Treatments	Hours Over 105 Degrees	Classification	Results
1.	10	6	0	10	26	40.5	Gen. Paralysis, Cerebral	Paroled
2.	8	16	16	1	14	15	Psy. Cerebral Syphilis	Paroled
3.	10	6	0	10	19	16	Gen. Paralysis, Cerebral	Paroled
4.	10	4	0	0	16	30.2	Gen. Paralysis, Tabetic	Marked Improvement
5.	14	8	0	10	18	32.2	Gen. Paralysis, Cerebral	Improved
6.	10	8	0	0	12	20	Gen. Paralysis, Tabetic	Paroled
7.	10	1	0	10	10	29.5	Gen. Paralysis, Cerebral	Paroled
8.	2	0	0	10	10	18.2	Psy. Cerebral Syphilis	Paroled
9.	22	16	11	10	14	20	Gen. Paralysis, Cerebral	No Improvement
10.	1	0	0	0	10	18	Gen. Paralysis, Cerebral	Paroled
11.	2	0	0	10	15	27	Gen. Paralysis, Cerebral	Improved
12.	0	0	0	10	15	27	Gen. Paralysis, Cerebral	Paroled
13.	0	0	0	10	12	16.5	Gen. Paralysis, Cerebral	Paroled
14.	0	0	0	8	17	20	Gen. Paralysis, Cerebral	No Improvement
15.	0	0	0	10	13	24	Gen. Paralysis, Tabetic	Paroled
16.	16	8	8	0	10	17	Gen. Paralysis, Tabetic	No Improvement
17.	16	8	8	10	15	17.7	Gen. Paralysis, Cerebral	Worse
18.	0	0	0	10	16	22	Gen. Paralysis, Cerebral	Paroled
19.	6	0	0	3	15	26.5	Gen. Paralysis, Cerebral	Improved
20.	0	0	0	3	15	40.0	Gen. Paralysis, Cerebral	No Change
21.	0	0	0	10	15	32	Gen. Paralysis, Cerebral	Paroled
22.	0	0	0	3	13	27	Gen. Paralysis, Cerebral	Improved
23.	0	0	0	10	13	19.5	Gen. Paralysis, Cerebral	No Improvement
24.	24	8	8	0	10	19.5	Gen. Paralysis, Cerebral	No Improvement
25.	34	16	16	3	16	15	Gen. Paralysis, Cerebral	Paroled

Cases No. 16 and 17 were put on the cabinet treatments at the insistence of relatives. They had shown no improvement following a series of typhoid injections. In cases 24 and 25 treatment was given following the failure of typhoid vaccine to show any change after a stay here of one year. Case 25 immediately showed a marked improvement and this was continued up to the time he left this hospital.

Of the twenty-five patients treated by this method or combined method with typhoid vaccine and tryparsamide, thirteen or 52.0% were represented to the medical staff, and all were recommended for parole.

The remaining twelve patients in this series have not been presented before the medical staff because they have either not shown enough improvement to warrant their parole or because they have gradually become worse or have shown no essential change.

Of the thirteen patients recommended for parole by the medical staff, eight have left the institution and are making a good adjustment on the outside. The remaining five patients all have a ground parole here and are waiting for some friend or relative to whom they may be paroled.

Six patients showed no change or became worse and the remaining six have shown improvement, which, if it continues, may warrant their representation with view of their release in the near future.

The results obtained by this method of treating paresis compare favorably with the results using other forms of producing the hyperpyrexia. This method has the added advantage that the cost of the cabinet is small and they last for years (the cabinets have been in daily use eight months and are in good condition). Further, in this form of treatment, the patient is free to move about as he wishes, and is not burdened by countless covers.

CONCLUSIONS

1. Twenty-five male patients have been treated by means of the electric cabinet, arsenicals and typhoid vaccine.

2. Of the twenty-five patients so treated 13 have shown sufficient improvement to warrant their release. This expressed in percentage is 52.0% of the patients treated.

3. Apparently it is the hyperpyrexia, and

not the way it is produced, that is the beneficial agent in paresis.

4. There are certain cases of paresis which show no improvement in spite of intensive antiparetic treatments.

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A DIATHERMY ELECTRODE BASED ON ENTIRELY NEW PRINCIPLES

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High frequency electric currents used for medical diathermy are applied to tissues in which heat is to be generated by means of conductive plates called electrodes. Obviously the material of which these electrodes are made must have certain definite properties in order that the administration of medical diathermy be satisfactory. It is important that uniform electrical contact between the electrode and the skin of the patient be secured. To obtain readily such contact, the electrode must be highly flexible, especially when the part of the body to be treated has an irregular anatomical topography. Furthermore, this close apposition of electrode and skin must be secured without the application of excessive pressure. If an electrode does not make uniform contact, there will be areas of high concentration of current and resultant excessive superficial heating at these points. If uniform contact can be secured only by exerting a high pressure, the higher areas of tissue will obviously be subjected to greater pressure than will the lower areas. This non-uniform pressure exerted on the tissues will impair circulation at the points of excessive pressure and tend to prevent the desirable vasodilatation which is so marked an effect of medical diathermy. Furthermore, the exertion of non-uniform pressure on the tissue will modify the flow of current

and may result in excessive superficial heating at certain points.

Obviously, perfect physical contact between electrode and skin is not alone sufficient for the

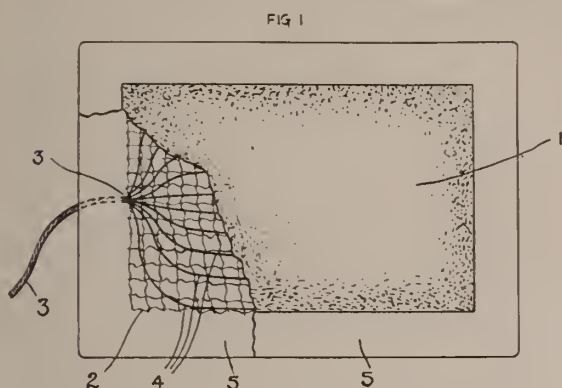


Fig. 1. Diagram showing construction of the new diathermy electrode. 1. Flexible, conducting electrode surface. 2. Specially woven metallic mesh. 3. Stranded conductor. 4. Strands of conductor making multiple contact with mesh. 5. Resilient backing of electrode.

best results. Perfect physical contact must of course be secured but it must be secured with uniform pressure on the tissues. It is also necessary that the conductivity of the electrode, which is electrically in series with the tissues of the patient, be greater than that of the skin and superficial tissues. Otherwise, the electrode would heat more rapidly than the superficial tissues on

characteristics already discussed, the electrode must be durable and capable of extensive use.

Various electrodes have been designed and put on the market for diathermy application. There, however, has been no marked departure from the type used a quarter of a century ago. In general, the material of which diathermy electrodes have been constructed has been a more or less flexible metal foil. An attempt has been made to facilitate the moulding, when applied, of the foil electrode more closely to the surface of the body by perforating the foil and sinuating the periphery of the electrode. The procedure has been successful to a certain degree—in fact, this design has made available the most satisfactory foil electrode and the most satisfactory of all diathermy electrodes up to the present time.

The authors, early in their investigation of electrode design, realized that solid metallic electrodes could not be made more flexible than had



Fig. 3. Illustrating the application of electrodes for electro-pyrexia by the belt and cuff method, a method which has been successfully employed by Dr. Arthur C. Jones of Portland, Oregon

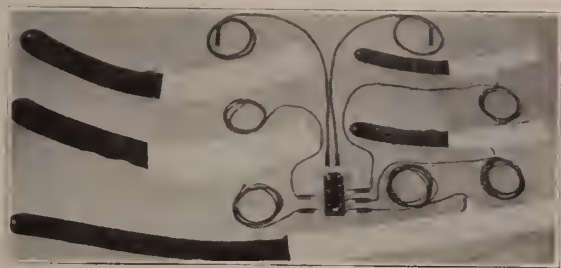


Fig. 2. Electrodes for the production of electro-pyrexia by the belt and cuff method

the application of an electric current and before the tissues had received an adequate treatment would attain a temperature sufficiently high to burn the patient.

Another requirement of a satisfactory electrode is that no cracks develop in the electrode and that it have no sharp edges or projections. Such imperfections result in concentration of current and the excessive local heating ordinarily referred to as "hot spots." Together with the

already been done by Neymann and Osborne in their design of electrodes for electro-pyrexia and still withstand hard usage. Therefore, attention was directed to research on a new type of conductive material which would have the desired flexibility. After extensive investigation and experimentation, a material possessing the desired physical and electrical properties was produced. This material consists essentially of a mixture of an adhesive substance and a highly conductive metallic powder in such proportions as will give maximum conductivity with maximum flexibility. While yet in the plastic state, this material is formed into electrode surfaces of the required size and shape. After these surfaces are processed, the material becomes highly conductive and flexible. During processing, the

electrode surfaces become securely and permanently fixed to a metallic mesh. This metallic mesh is specially woven so as not to impair the flexibility of the electrode surface. Multiple electric contact with the mesh is made by means of a "fanned out" stranded conductor. The entire electrode is backed with a highly resilient, flexible rubber. The electrode in its finished state consists of a lead-in conductor, rubber backing, current distributing mesh, and conducting surface, permanently assembled into a single compact unit.

The salient characteristics of this electrode are:

1. High Flexibility.
2. Requisite conductivity.
3. Durability.

Use of this electrode with an appropriate electrode compound should materially reduce the possibility of "hot spots" and diathermy burns. An electrode of such high flexibility is easy to apply, perfect apposition with skin being secured without the application of excessive pressure. It has no sharp metallic edges and projections to cause high concentration of current and resultant burns. If, after very long or careless use of the electrode, its surface should crack, no arc will be established between the separated portions of the surface because the underlying conducting mesh will keep the entire electrode surface and all parts of it at the same electric potential.

ROENTGEN VISUALIZATION OF THE BILIARY TREE FOLLOWING A BARIUM MEAL*

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Visualization of the intrahepatic bile passages is readily accomplished in the presence of an external biliary fistula by simple injection of a contrast medium. Bismuth paste as used by Tenney and Patterson or iodized oil which is generally preferred yields upon injection, striking roentgenograms of the biliary tree. In the absence of a biliary fistula the intrahepatic radicals are only occasionally visualized. The outlining of

the bile ducts under this latter condition is the result of the retrograde passage of either air or barium or both due most frequently to the presence of an internal biliary fistula. The visualization with barium will be treated at some length later. The demonstration of the biliary tree with air is quite rare as only three examples could be found in medical publications. Brief mention of the individual cases might therefore prove of interest. Ohnell and Lindbloom in a routine cholecystographic examination observed a tree-like system of rarefactions within the liver shadow. This phenomenon was apparently due to a spontaneous cholecysto-duodenal fistula which permitted the entrance of air into the tributary channels of the hepatic ducts. A somewhat similar case of air in the bile passages demonstrated by x-ray was reported by Friederich in a patient who had an artificial choledochoduodenostomy. Air injection of the bile passages was reported also by Graeberger. The unique observation of Biesi although not actually involving the intrahepatic divisions might be appended here. Biesi noted following a contrast meal administered to a patient who had suffered from cholelithiasis, air and barium in the gallbladder due to a spontaneous cholecystoduodenostomy.

A survey of the literature yields reports of visualization of the biliary passages by means of barium taken by mouth in 24 cases. In 7 of the 24 instances an artificial communication had been previously established by operation. In 5 (Lenk, Swalm and Marges, Fetzner, Parade and Westphal) of the 7 cases with anastomoses a choledochoduodenostomy had been performed. In the other two operative patients (Graeberger, cases 2 and 3) the duodenum had been united to the gallbladder. Of the remaining 17 instances of visualization of the biliary tract by barium 8 were due to spontaneous internal fistulae and 5 to an insufficient papilla (Beall and Jagoda, Jenkinson and Browse, case 2, Venable and Briggs, Stephenson and recently Rees). In four reports (Reiman, Davis, 2 cases, Fishbaugh) the explanation of the retrograde passage of barium into the bile channels was not apparent. Of the 8 spontaneous fistulae 4 were between the gallbladder and duodenum, 3 between the common duct and the duodenum and one between the gallbladder and the stomach (Dalsace). In

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the group of spontaneous cholecysto-duodenostomies one was occasioned by a ruptured ulcer (Harding). In the other three cases (Habbe and Smith, Carman and Miller, Jenkinson and Browse, case 1) the cause of the union between the two organs was not stated. In two of the three instances of anastomosis between the common bile ducts and duodenum the communication was due to perforation of a peptic ulcer (Kantor and Jaffin, case 2, Bignami and Agati). The cause of the fistula in the other case of choledochoduodenostomy also reported by Kantor and Jaffin (case 1) apparently was not established. To the above series of 24 cases of visualization of the biliary tree by barium can be added one which we observed.

Case Report. M. A., a white male of 59, consulted us in May, 1929, because of upper abdominal pain. With the aid of the patient's son, a recent graduate in medicine, the following account of the previous history was obtained. Early in June 1927, the patient developed a silent, progressive jaundice, obstructive in type, associated with the presence of a distended gallbladder. At no time did the obstruction become complete as bile persisted in the stools. On July 6, 1927, operation was performed and disclosed a dilated common duct, a distended gallbladder, a normal pancreas and a few soft, pink, peripancreatic lymph glands. In probing the common duct an obstruction was encountered just proximal to the ampulla of Vater. The surgeon considered the lesion to be a benign stricture of the duct. A cholecystectomy and a choledochoduodenostomy were performed. So far as could be ascertained the gallbladder was normal and for this reason the logic of its removal could not be understood by us. Following operation the jaundice rapidly disappeared and the patient made an uneventful recovery.

For approximately six months subsequent to the operation the patient felt well except for a sense of epigastric fullness following ingestion of a fair-sized meal. The discomfort would be relieved by belching but this was as a rule difficult to accomplish. After the first half-year the epigastric fullness became much more troublesome inasmuch as distress followed the intake of even small quantities of bland food. Approximately nine months following operation the patient began to experience in addition to the fullness mentioned above, severe pain localized to the right upper quadrant. The pain which was of a colicky nature would occur during or within a few minutes after meals and often was of such severity as to render the patient speechless. The patient would as a rule arise from his chair and walk about doubled over until the pain subsided. This usually required but a few minutes. Recently this sharp pain increased in intensity and frequency to such an extent that the patient was fearful of eating and as a result was unable to perform any physical work. The patient had consulted two surgeons and two in-

ternists prior to visiting us and had been fluoroscoped twice. No explanation of the symptoms was offered, although the patient's son was told there was some delay in the emptying of the stomach due to a low-grade duodenal obstruction.

In listening to the patient's complaints one could hardly avoid being reminded of the clinical manifestations of gallbladder disease. The fullness after meals, the sensation of a weight in the epigastrium and the desire to belch differed in no way from the dyspepsia seen in patients with cholecystitis or cholelithiasis. The sharp pain of short duration occurring in the upper right quadrant resembled abortive biliary colics. The idea that the basis of the symptoms was to be sought in the biliary tract immediately suggested itself. Knowing that there was some impediment to the escape of food through the duodenum it seemed reasonable to assume that the gastro-duodenal chyme might be forced by peristalsis into the anastomosed portion of the com-



Fig. 1. Roentgen Visualization of the intrahepatic ramifications of the biliary system following administration of a barium meal. A choledochoduodenostomy had been performed for an obstruction at the ampulla 22 months prior

mon duct. With this possibility in mind an x-ray examination with barium was recommended and carried out by Dr. C. H. Warfield.

It required only a moderate amount of compression of the stomach and distal duodenum to cause the contrast medium to enter the choledochus and ascend into the intrahepatic bile passages. The injection of the biliary tract with barium seen fluoroscopically is well demonstrated in the accompanying illustration (Fig. 1). A moderate stenosis of the descending portion of the duodenum was also established. A gastro-enterostomy and exclusion of the pylorus by ligature with kangaroo tendon was recommended. On August 13, 1929, operation was performed by Dr. Karl A. Meyer, who found

the duodenum, the common bile duct and the omentum bound together into an inextricable mass. It was deemed inadvisable to attempt to separate the individual structures by dissection. A posterior gastro-enterostomy was performed and the pylorus allowed to remain patent, as it also was covered by adhesions and was not readily accessible. No masses were palpable in the region of the head of the pancreas or the ampulla. The lymph glands were grossly free from malignant invasion. The recovery was an uneventful one. Within two weeks the patient left the hospital free of symptoms. He soon regained his weight and strength and returned to his former occupation. An x-ray examination performed six weeks after operation showed that practically all the barium passed through the gastro-enterostomy stoma. None was seen to leave the duodenum. Barium could no longer be forced into the common duct. The patient remained in a state of comparatively good health until April, 1930, when he again developed abdominal pain. The pain became increasingly worse and on this account in May, 1931, exploration was undertaken elsewhere. A diffuse thickening with induration of the pancreas was found but no metastases. The patient died in September, 1931, with the clinical picture of an abdominal carcinoma.

Commentary. Since the time we observed the passage into the intra-hepatic ducts of barium given by mouth we have made a routine search for similar cases. Although our material has included several individuals previously subjected to choledochoduodenostomy and similar operations no additional instance of biliary tree visualization presented itself to date. We have been led to conclude therefore, that the retrograde filling of the bile channels occurs only in the presence of certain exceptional conditions. What these conditions are cannot be definitely determined. In most of the reported cases of biliary tree visualization no information other than the presence of a fistula is offered to explain the regurgitation of barium into the liver. Since the retrograde passage of duodenal contents into the liver occurs only exceptionally even where an internal biliary fistula exists the mere presence of the preternatural communication does not of itself explain the altered physiology. An additional factor is suggested by the study of our case, viz., the interference with duodenal emptying. That the obstructive element was of significance is borne out by the fact that following gastro-enterostomy the barium failed to enter the liver. In those cases also in which an internal biliary fistula is absent and the retrograde passage is ascribed to an incompetent

sphincter of Oddi, intraduodenal pressure occasioned by obstruction is apparently an important factor. In the case of Venable and Briggs a high intestinal obstruction producing an increase of pressure within the duodenum appeared to result in regurgitation into the common and hepatic ducts. In the case of Rees the explanation for the reflux was given as traction by a fistulous tract resulting in incompetence of the sphincter of Oddi. However, at operation the duodenum was found to be dilated and the tract was found to cross the pars horizontalis apparently producing a partial obstruction.

Visualization of the biliary ramifications following ingestion of a barium meal is generally an accidental observation. The contrast medium is administered as a rule for the purpose of disclosing an intrinsic gastric or duodenal lesion. The presence of an internal biliary fistula unless artificially produced is not suspected and the injection of the biliary system comes as a great surprise. The symptoms which occur in the presence of regurgitation into the biliary passages are not uniform. Most frequently they resemble the manifestations of gallbladder disease. At times as in the case of Beall and Jagoda a cholangitis develops indicated by the presence of chills and fever. Jaundice as one would anticipate from the knowledge of conditions present is exceptional. It was absent in all the barium cases and present in only one of the cases in which air was noted in the intrahepatic ducts (Ohnell and Lindbloom). Occasionally the symptoms are constitutional and do not suggest the location of the difficulty. For instance, in the case described by Dalsace of spontaneous cholecysto-gastrostomy, asthenia and emaciation were the presenting complaints. The occurrence two years prior, however, of abdominal crises and jaundice might have suggested a point of attack. As seen from the above description none of the symptoms associated with retrograde filling of the biliary tree are distinctive. The diagnosis can hardly be made in the absence of a history of an artificial or spontaneous internal fistula without the aid of the x-ray. With the knowledge of a previous anastomotic operation the presence of symptoms of the gallbladder type is highly suggestive. When as in our case it is known also that the gallbladder is absent the

occurrence of selective dyspepsia and upper abdominal colics permit a presumptive diagnosis.

SUMMARY

1. In the absence of an external biliary fistula occasional roentgen visualization of the intrahepatic biliary tree is encountered due to barium or air or both.

2. The retrograde passage of barium and air occurs in connection with an internal biliary fistula or an incompetent sphincter of Oddi.

3. An internal biliary fistula or incompetent sphincter does not of itself explain the regurgitation into the hepatic ramifications. Increased intraduodenal pressure due to obstruction is apparently an additional requisite factor.

4. The symptoms associated with retrograde filling of the biliary channels resemble those of gallbladder disease and its complications.

5. The diagnosis prior to x-ray examination can be suspected when an internal biliary fistula (usually operative) is known to exist.

1819 West Polk St.

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THE INNOCENT BYSTANDER*

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The newspapers record almost daily the fate of an innocent bystander. Without thought of danger and without warning of its presence, a man finds himself in the line of gunfire in a battle between police and gangsters or between two rival organizations of racketeers; or, while standing on the sidewalk or a safety island, he is suddenly run down by a careening automobile. His body may be mangled by an airplane which plunges down upon him out of the blue sky like Jove's thunderbolt; or his head may be crushed by brick or flower-pot falling from an upper story. Some fate brings the innocent bystander and the bullet, the automobile, the airplane or the flower-pot together just at the proper moment although the unfortunate victim had nothing to do with gangster, automobile driver, airplane pilot or careless workman or housemaid. He was attending to his own business and was innocent of any offense. Such casualties are so frequent that we have little interest in the fate of the individual victim. We are more interested in the curious and unusual manner in which Fate operates.

But many a man contracts disease or meets death in such subtle ways that he is not generally recognized as an innocent bystander. Only physicians and a few wise laymen know his fate for what it really is—an unfortunate and fatal accident by a means no less deadly because it

*Given over Radio Station WGN, October 31, 1933, for the Educational Committee, Illinois State Medical Society.

is invisible. The organ of Fate in this instance is neither gun nor automobile carelessly handled, but disease germs disseminated by some ignorant or careless carrier.

Let me give you a few examples. Your child, in full health because you have given adequate care to his diet, exercise and rest, goes to school. Another child in the very early stages of scarlet fever or with a very mild form of the disease, is in the same class room. In some way he unintentionally transmits the germs to your healthy child and you have the red card of quarantine on your door for six weeks and possibly a visit from the undertaker. Your child may acquire diphtheria in the same way. He is an innocent bystander whose fate is only less spectacular than that of the victim of a stray bullet.

A few years ago a group of distinguished people attended a banquet and, among other things, were served raw oysters. Two or three weeks later several of them were in bed with typhoid fever and some of them died. It was subsequently learned that these oysters had come from waters that had been carelessly contaminated by city sewage. There were fatal cases of typhoid fever in Chicago at that time from the same sources. Let me hasten to add that the oyster dealers compelled that city to cease contaminating their waters with sewage and as a result of increased vigilance raw oysters are now a reasonably safe article of diet. But the unfortunate banqueters were in a very real sense, innocent bystanders.

Amebic dysentery is a tropical disease which is occurring with increasing frequency in Chicago and its vicinity. In the tropics this disease is usually acquired by drinking contaminated water. In temperate climates it is commonly transmitted to unsuspecting persons in food handled by carriers of the infection. A number of carriers have been discovered in Chicago. Amebic dysentery is usually a chronic and disabling disease. Sometimes it runs an acute and fatal course. It is characterized by diarrhea and pain and the passing of blood and mucus at intervals, all due to extensive ulceration of the lower bowel. About 25 per cent of the cases are complicated by a huge abscess in the liver.

The most pathetic of all innocent bystanders is the new-born baby rendered hopelessly blind by gonorrheal infection of the eyes during the process of birth. More than one-fifth of all blind

persons in the United States and more than three-fourths of all blind children under five years of age lost their sight from this preventable disease. They are the victims of ignorance and prejudice. For many years the medical profession has urged the passage of a law requiring the treatment of the eyes of *all* newly born infants, *immediately* after birth with a very dilute solution of silver nitrate. This is a harmless, but effective prophylactic procedure. With the support of the Illinois Medical Society and the Society for the Prevention of Blindness, such a law was recently passed by the legislature of this State. When its provisions are carried into effect the number of blind children under five years of age will be reduced by three-fourths, and the most pitiable of innocent bystanders will be saved from the total darkness of sightless eyes.

Dr. Woods Hutchinson many years ago declared that "germs can neither run, jump nor fly. They have to be carried." The carriers of disease germs, whether they be human or insect carriers, are generally ignorant of their state and quite innocent of intentional offense. This very fact renders them more dangerous. The carrier of whooping cough, like the far more deadly rattlesnake, makes his presence known. The human carriers of the germs of typhoid fever, or amebic and bacillary dysentery, of scarlet fever and diphtheria, of cholera, and the insect carriers of bubonic plague and malaria, approach insidiously and strike in the dark.

The people of a city whose water supply is contaminated by its own sewage, as was that of Chicago before the digging of the drainage canal, can expect, and as a fact do have, a high death rate from waterborne infections like typhoid fever, the dysenteries and cholera. The citizens of such cities are like soldiers in battle. They are constantly exposed to danger and death. But under modern sanitary conditions the general population is well protected against wholesale infection. It is under just these conditions that the individual carrier of disease becomes a special menace because of his ignorance and insidiousness and because he is not suspected. His victims are the innocent bystanders of disease transmission.

There is a significant difference between the innocent bystanders who succumb to disease and those who are the victims of the strange and

bizarre accidents recorded in the daily papers. Little can be done to protect the helpless pedestrian against wild bullets and wilder drivers of cars. But much can be done to protect the equally helpless prospective victims of carriers of disease germs. Vaccination against smallpox has been proved such an efficient means of protection against that disfiguring disease, that it should be voluntarily utilized by every intelligent person. Better still, universal vaccination should be required by law, in order to protect the general population against the potential danger from the ignorant, the careless and the selfish who will not submit voluntarily to this practically harmless measure of defense. An almost equally complete protection can now be obtained against typhoid fever, scarlet fever and diphtheria.

In calling attention to the insidious danger to your health from carriers of the germs of disease, it is not my intention to arouse unnecessary fear or to make you suspicious of your new cook or your neighbor. In pointing out the potential danger I have also indicated the means of avoiding it. Seek the counsel of your family physician as to the advisability of acquiring protective immunity for yourself and your children against diseases communicated by carriers of infection. Don't be an innocent bystander in matters of health.

COMPLICATED FRACTURES OF BOTH BONES OF THE LEG AND THEIR TREATMENT*

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My excuse for presenting another paper on such a hackneyed subject as fractures, is their increasing importance as a result of the hurrying conditions of modern life, particularly the speeding automobile.

This has been recognized by reports of Fracture Committees of our various medical organizations and the fracture exhibits made at the meetings of the American Medical Association and the American College of Surgeons.

My reason for selecting fractures of both bones of the leg as my subject is my personal experience with this type of fracture, as well as the difficulties others have found in their treatment.

The late lamented Sir Robert Jones, in one of his lectures said, "If I were asked which fracture was the most difficult to reduce in the lower limb, I should say fracture of the tibia and fibula in the lower third." I might add, as a result of a personal experience "and to keep them reduced."

For in the long period of professional practice, the only malpractice suit with which I was ever threatened, was due to a fracture of this kind in which reduction was properly made and in which later muscular contraction reproduced over-riding in an oblique fracture of the tibia and fibula at the junction of the middle with the lower third. The use of ordinary splints or of Plaster of Paris will not retain the bones in reduction and some form of continuous extension and counterextension becomes necessary.

When, in addition to a fracture of this kind, you have a comminution of both bones and extensive injury to the soft parts, the problem becomes a still more difficult one. In such cases, skeletal traction and the Thomas splint is recommended by Scudder, Wilson, Cochrane, Kellogg, and Speed in their books on fractures and Eliason in his article on these cases in Nelson's Loose Leaf Surgery, falls in line with the other authorities. Hitzroth, one of the editors of "Oxford Loose Leaf Surgery," in a paper on "Fractures of Both Bones of the Leg," read before the surgical section of the A. M. A. in 1928, published in the "Journal" for January 26, 1929, says, "Fractures in which the prognosis will be poor, even with the best treatment, are the bad compound fractures with injuries by direct violence, fractures in elderly debilitated persons, fractures with nerve and vascular injuries."

These fractures, he thought, required especially skilled and trained treatment and in the discussion of his paper, the only method suggested by any of the discussants were: *First*, extension by adhesive tape and weight traction; *second*, skeletal traction by tongs in the malleoli of the tibia, the leg suspended in Thomas splint; *third*, primary operative treatment and plating of the bones.

In the February, 1933, number of "Surgery, Gynecology and Obstetrics" in an article entitled, "Skeletal Traction with the Steinman Pin. Results Obtained in 52 Cases of Fracture of Both Bones of the Leg" by Drs. Lindsay and McKlown, a report is made of these cases occur-

*Read before the Section on Surgery of the Illinois State Medical Society, Peoria, May 17, 1933.

ring in the Orthopedic Section of the Department of Surgery of the Yale University School of Medicine. These cases are admirably reported in detail and the technique used, well described.

After incision of the soft parts overlying the os calcis, the Steinman pin is passed through the bone by hand drill and brace. Traction is made by calipers on the projecting ends of the pin, the leg being suspended in a Thomas splint. After four to six weeks, the pin is removed and the leg is put up in a Plaster of Paris boot. This is removed in four to six weeks and the leg is then kept in a Delbet removable splint for another four weeks.

While this is probably one of the best forms of skeletal traction for use in these cases, the purpose of this paper is to present a fourth alternative which seems to me, as a result of considerable personal experience, (not nearly as many as 52 cases) to be more desirable than the other methods outlined.

I refer to the use of the Hackenbruch "Distraction clamp," which I here show you and the use of which is shown to better advantage demonstrated by the lantern slides. While little or no mention is made of this method in the text-books, or in current English medical literature, it may seem presumptuous for me, on the basis of comparatively few cases, to recommend this method. A few cases well studied, however, frequently prove more illuminating than many not so well analysed. Moreover, there is abundant confirmation of my experience in current German medical literature and Hackenbruch has written a book of about 200 pages on the subject, a part of which I shall take the liberty to present to you in translation.

While the use of the clamp, as he presents it, has been highly satisfactory in especially refractory cases coming late under observation, in which reduction might prove difficult, from too great pressure on the soft parts, the use of the Steinman pin passed through the os calcis may prove a useful adjunct.

Momburg, who has had the most extensive use of this combination, reports it as highly satisfactory and Kirschner has made use of lubricated chromium plated piano wire, passed through a hollow needle of suitable caliber around the os calcis. Traction on the projection wire being used temporarily to assist the clamp and being removed in a few days.

In all complicated compound fractures, it goes without saying that loose fragments of bone and injured tissues must be surgically removed and the continuous use of the hychlorite method of disinfection used. This can readily be done with the Hackenbruch clamp as large windows completely surrounding the leg, permit complete inspection and painless handling of the wounds.

The patient is enabled to be up and about on crutches even in severe injuries in a comparatively short time, which contributes greatly to the rapid improvement of the general health and, in consequence, more rapid healing of wounds.

A brief description of this clamp, along with some lantern slides may serve to supplement a view of this clamp which I am sending about for your inspection. It is a ball and socket jointed splint made of chromium steel with great exactness to insure against breakage. It is assembled out of three individual parts. *First*, a screw rod with the screw grooves running both right and left, which in its center has a headlike enlargement. This is pierced by four bored openings which enables it to be easily turned by a steel pencil inserted in them. *Second*, a plate at either end with a ball and socket joint which is easily adjusted to any required position. If these clamps are embedded in Plaster of Paris, applied to the leg and the plaster then divided circularly at the level of the fractures, the two halves of the splint, by a simultaneous turning of the screw rods of both sides, may be made to separate two and one-half to three inches, thus providing abundant extension and counterextension, which is permanently retained. The possible changes in direction, which may be made by the ball and socket joints, in getting a correct position and line of fracture, is best shown by these lantern slide pictures.

These are all made possible by opening the ball and socket joint of the clamp, making such alterations as are found necessary or desirable and then fix the joints in the position attended by the set screws provided.

The presentation of the history of one of the severe cases seen by me may serve as typical of the course followed in all of them.

Mrs. D. Z., aged 70 years, on December 12, 1928, while crossing the street, was struck by a rapidly moving auto, her left leg receiving most of the impact, which produced a compound comminuted fracture of both tibia and fibula at the junction of the middle and

lower third of the leg. Fragments of the tibia protruded through two openings on the inner side of the leg and there was considerable bleeding from branches of the anterior tibial artery, this continuing for several days after the accident.

After preliminary cleansing of the leg and removal of some fragments of bone, the leg was placed in a posterior leg splint of aluminum and dressings changed frequently. On the fourth day, a gangrenous area, the size of an orange, appeared on the posterior aspect of the leg. As there was considerable shortening and overlapping of the bones, the fracture clamps were used, the method of use as advised by Hackenbruch being followed.

The leg was flexed at right angles at the knees and the thigh similarly flexed at hip joint and by traction on femur and counter-traction on foot and ankle, the reduction was made as far as possible. After reposition of the fragments, the limb being held in the same position, pads of absorbent cotton were bandaged in places about the head of the tibia, above, below and about the ankle and fixed in place by bandages, sterile gauze was placed over the wounds and held in place.

Then from the knee to the upper part of the foot, a broad strip of cotton was placed for protection on the crest of the tibia and the entire leg carefully bandaged from the toes to the patella, so that the gauze covered part was exposed and could be freed between the bandage layers. Then thickly over the ankle was bound a strip of cotton about two inches in breadth. This served to protect the skin when the plaster bandages were applied. Then the plaster bandages were applied from the toes to the patella, incorporating two Gigli saws, front and back, at the level of the fracture. The bandages were strengthened by laying two or three strips of plaster bandage lengthwise.

As the plaster hardened a cut divided it front and back with the Gigli saws incorporated in the plaster. Then the clamps were bandaged in place above, below the knees and below, above the ankle on either side and fixed in place. After the plaster, fixing the clamps, was hardened, it was separated, as shown in slides, by the Key.

A still larger window was cut in the cast posteriorly so that the sloughing portion of the leg might be dressed at intervals with a diluted alcohol dressing. A very considerable portion of tissue, overlying the gastrocnemius muscle, separated after five weeks and four weeks later skin grafts were placed over the extended raw surface and closed the gap in a very satisfactory manner. Bony union, without shortening or any noticeable deformity, occurred, and five and a half months after the receipt of the injury, she walked without cane or crutch and two months later without a limp. The x-ray pictures here shown, give some idea of the severity of the fracture and the final result. Other severe cases, which might be detailed, had a like satisfactory outcome.

The cases which I have treated were of this complicated character, so severe that they could

not be treated in recumbency and operative treatment offered still less promise.

One advantage of this splint is that one can always check up by x-rays on position and make adjustment under fluoroscope, and hold the position without removing splint or greatly disturbing the patient.

In conclusion, *first*, in complicated fractures of tibia and fibula of the lower third, we have a fracture difficult to reduce and still more difficult to hold in reduction. *Second*, the methods in general use are forms of skeletal traction, requiring bed confinement and making more difficult the treatment of complications. *Third*, the method here described, is effective in the severest types of cases in retaining the bones in any position desired and does not necessitate long bed confinement, the general health of the patient being correspondingly improved.

DISCUSSION

Dr. J. H. Bacon, Peoria, Ill. The surgeon who is treating one of these compound comminuted fractures produced by a high powered machine, automobile or otherwise, is often worried. Lovett has wisely said, concerning these fracture cases, "ask yourself what are you trying to do and are you doing it." It is one thing to get the fragments of bone in position and it is quite another to hold them there. Any method that will give good results is a method that we are looking for. It is not always one method that will suit every case. Every comminuted fracture is an individual case of itself and must be treated individually. We often neglect to care for the soft tissues properly and many of the bad results are not from malposition but from malnutrition.

There might be added another method which we often hesitate to select, and that is amputation of the leg itself. This is sometimes necessary on account of the financial status of the individual, because in times like these many cannot have the financial backing which is necessary for a long treatment. I can never forget a case I saw in Massachusetts, in which a small boy of eight had been brought into the Peter Bent Brigham Hospital suffering from extensive injuries to a leg brought about by being caught in a wagon wheel. There were multiple fractures of the leg and thigh, and multiple contusions of the soft parts. Two eminent surgeons saw the case. One said, "amputate the leg," and the other, "I think I can save the leg." The first one replied, "it is your job." I saw the end result after nine years when this boy of 17 was in a state institution where he had been during this long period. He had had, as I remember, somewhere around twenty different operations. He had a leg on which he could barely stand but he could not get about in cold weather. Sometimes the end results not in mortality but in morbidity require amputation. We should think of it ser-

iously in many of these severe cases, especially if there is much mangling of the soft parts and much damage to the blood supply.

There one possible objection to the use of this instrument shown by Dr. Montgomery. Are you interfering too much with the blood supply when you put on pressure traction on the distal part of this leg? It boils itself down into one's ability to use the apparatus and the ability to properly apply plaster.

Another sidelight on the use of plaster. We all like to see a well applied cast and the fine appearance that plaster makes, but are we sufficiently concerned with the part of the plaster that is coming into contact with the individual himself. Are there any wrinkles there? It does not matter if there are wrinkles on the outside of the cast but it does make a big difference if there are any on the inside of the plaster, as their presence may seriously interfere with the blood supply of the tissues.

This has been a very interesting though now a new method. It is one that has given results in Dr. Montgomery's hands. Any method or apparatus that gives results should be considered. This apparatus has the advantage of being small and not expensive, and of being easily applied.

Dr. E. B. Montgomery, Quincy (Closing the discussion): I presented this only as a method that was successful in my hands in lessening the period of confinement to bed and in the hospital, which are important features especially in these days.

THE MEDICAL MANAGEMENT OF HEPATIC DISEASE*

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Physiologic and chemical studies on experimental animals have provided a clearer understanding of liver function and have made possible the formulation of general principles of treatment. Clinical application of these principles has, however, lagged despite the appearance in the literature of numerous contributions on the subject. As a result the average clinician has neither accepted nor followed a definite line of attack in the general management of hepatic disease comparable, for example, to that almost universally adopted in the treatment of cardiac disease.

The liver is an organ of exceptional interest. Originally a simple tubular gland whose chief relationship was with bile capillaries, it has, in the higher forms of life, become especially con-

cerned with matters of metabolism and nutrition, and its parenchymal cells have acquired an intimate contact with the blood system. The seeming simplicity of the undifferentiated liver cells is in reality deceptive. Their mass is constantly changing. The individual cells as well as the liver as a whole are constantly changing in unison with physiologic and pathologic processes; they are peculiarly sensitive to physical, chemical and biologic reactions. A particular feature indicating the apparently primitive nature of the liver parenchyma is its extraordinary ability to repair damage and, by means of regeneration, to restore normal function in areas where destruction has occurred.

As a result of pathologic change a number of characteristic events result. The liver is not liable to the pathologic conditions usual in other organs. Ordinary acute inflammation, for example, is uncommon; tuberculosis is rare except as a part of a generalized condition. The peculiar things that happen in the liver are four in number, and represent a fairly constant sequence of events. First, *parenchymatous degeneration*: This results from a variety of influences such as infections, toxemia from infection, chemical poisons, and anoxemia. Cloudy swelling is produced which may be transitory, or the process may go on to fatty degeneration or even to necrosis which may be focal or diffuse. Fatty degeneration is the term long applied to a condition of cell degeneration and of functional disturbance leading to increased deposition of fat. Serious damage to the liver cell leads to necrosis which may affect almost the whole mass of liver cells or be limited to groups of lobules, or of certain cells in the liver cell cords. Acute, diffuse necrosis (yellow fever) represents the reaction of highly sensitive cells to a toxic agent without injury to the interstitial cells or the framework of the liver. Since the liver cells form the substantial, if not the only elements of the wall of the bile capillaries, jaundice is inevitable. Both severe and lesser degrees of damage which may result in recovery because of repair or of regeneration occur in yellow fever and appear to be present in many cases of catarrhal jaundice. The term "acute hepatitis" has been applied to many cases of milder liver damage resulting from various causes. In ordinary cirrhosis the process is gradual, slow and progres-

*Abstract of a Clinical Lecture, illustrated with lantern slides, given before the Section on Medicine, Illinois State Medical Society, at Peoria, on May 18, 1933.

sive. Second, *regeneration*: Regeneration of liver cells unharmed or only slightly damaged in areas of necrosis is striking, rapid and inevitable if time permits and conditions are favorable. It has been estimated that as much as 150 grams of active liver cells may regenerate in one day and that it is possible for six-sevenths of the liver to regenerate in the course of six weeks. Regeneration will not occur during starvation or when the common duct remains obstructed. A high carbohydrate intake favors rapid regeneration. Third, *fibrosis*: Connective tissue condensation occurs when the volume of liver cells is reduced by acute necrosis without injury to interstitial tissue and restitution to anatomical integrity may occur without cirrhosis. Liver injury affecting the connective tissue as well as the liver cells, as in true acute inflammatory lesions and in the chronic progressive damage of portal cirrhosis, produces marked increase in connective tissue and subsequent contraction. Fourth, *portal stasis* occurs when the fibrosis prevents adequate circulation of the portal blood through the liver. Other venous channels attempt to compensate for this defect and may succeed indefinitely without the appearance of symptoms. With decompensation ascites appears.

Of chief importance in treatment is recognition of known facts in regard to the role of the liver in carbohydrate metabolism. The liver is constantly changing during the process of food storage. It stores exogenous carbohydrates as glycogen apparently with great facility. The liver cells are concerned with the conversion of protein (as much as 58 per cent.) and fat (estimated at 10 per cent.) into carbohydrate, but apparently perform this function with greater difficulty. During fasting the glycogen content of the liver is greatly reduced; the cells appear shrunken and the bile capillaries and especially the blood capillaries appear relatively large. By the administration of glucose one can produce an increase in the size of the liver cells and, in fact, of the entire liver mass. A low glycogen content prevents normal efficiency of function. Conversely, a liver well stored with glycogen increases resistance to damage. The administration of glucose has been shown to favor regeneration and to decrease the coagulation time of the blood in cases of experimental liver injury.

For these reasons a high carbohydrate intake is of first importance in liver disease as a matter of prevention and as a matter of treatment both of acute and chronic processes. The average normal diet contains from 400 to 500 grams of carbohydrate. At least this amount, and more if at all possible, should be supplied in liver disease. If this amount can be taken by mouth or be given by means of a stomach or duodenal tube in the form of carbohydrate foods, including fruit juices and glucose, no other route of administration need be used. It may be necessary to resort to the use of intravenous glucose (10 per cent. administered slowly). Rectal administration is not well borne and is relatively worthless. In acute cases of liver damage no attention need be paid to the amount of protein permitted provided it is low in order to spare the overburdened liver cells and prevent additional toxemia. In chronic cases the protein intake should be sufficient to meet the requirements of the individual (about 1 gram per kgm.). The fat allowance should be low, particularly in cases of jaundice during which clinical experience indicates fat is poorly tolerated.

In cases of obstructive jaundice the administration of whole bile is indicated on physiologic grounds. In experimental studies bile has been found necessary to keep animals in good condition; in man the need is less apparent. Bile from a drainage tube may be reintroduced or ox-bile may be used.

In liver disease associated with portal stasis and decompensation (ascites) the newer diuretic regimen recommended in cardiac and renal edema has frequently proved of value in ridding the patient from and keeping him relatively free of ascites. Briefly, the elimination of sodium chloride from the diet, the use of large amounts (9 to 10 grams daily) of ammonium nitrate or chloride and the repeated use as required of a mercurial diuretic such as salyrgan, employing the evidence of ascitic accumulation as well as weight and water balance charts as a guide, will obviate the necessity of paracentesis and keep the patient in relatively good condition. The danger of hematemesis, however, remains. Obviously, this form of treatment can not be expected to be of value if serious loss of hepatic function is present.

THE EFFECTS OF AQUEOUS SOLUTIONS ON THE NASAL CILIATED EPITHELIUM*

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This subject is not one of recent discussion as Piorry in 1844 as quoted by Wright¹ stated that water was injurious to the upper respiratory tract. However, as accepted authorities in recently written text-books vary in their statements from interdiction of all aqueous solutions in the nose² to use of irrigations by aqueous solutions as detergents and stimulants to the muscle fibre of the swell body of the turbinate, this⁴ condition and the recognition of extreme importance of the nasal mucosa as a defensive mechanism against bacterial invasion makes it important to decide this mooted problem.

The defensive mechanism of the nasal mucosa can be divided into a⁵

A. Major and interdependent trio.

1. Mucus secretion.
2. Ciliated epithelium.
3. Phagocytosis and anything interfering with ciliary activities may cause stagnation with resulting infection.⁶

B. Minor: Local immunity, reaction and lysozyme activities.

⁷ The ciliated epithelium lining the posterior two-thirds of the nose, extending into sinuses by its rhythmic motion in the mucus not only drains downward to nasal floor and posteriorly to the pharynx, actively draining the nasal cavities but inactively by the tenacity of this same mucus the nonciliated anterior one-third of the nose.⁸ The inhibitory action on bacteria of the mucus is attributed to its motility and chemistry of its destruction by bacteria. Therefore the persistence of ciliary activity is of prime importance.

Regeneration of ciliated epithelium has recently been proven, notwithstanding metaplasia is the rule when continued destruction occurs.

Aqueous solutions can act deleteriously on the thermally, electrolytically and generally very sensitive ciliated cells in either direct or indirect manner.

Indirectly by solution of the mucus with exposure of the cilia to the air with resultant de-

struction. This unfortunately is the action of the detergent solutions as borax, etc.

Directly the extent,⁹ effectiveness and direction of ciliary propulsion are greatly modified by excess of moisture which creates gravity currents flowing over neutralizing ciliary currents. These currents are determined by the amount and viscosity of the fluid and also by any one or combination of the following which vary directly with the quantity, frequency of medicant in solution, strength of solution and traumatic method of use, viz:

1. Solutions¹⁰ of sodium chloride in 0.9% to 2% showed an inflammatory reaction directly proportionate to the above both macroscopically and microscopically with sinus filled with fluid in those examined within 25 minutes after irrigation.

2. Trauma by force of fluid tears of the less strongly cemented ciliated cells.

3. Thermally¹¹ ciliated epithelium is especially sensitive to cold.

4. Strength of solution¹²—

a high sensitivity to osmotic pressure another characteristic of ciliated epithelium.

5. Electrolytes effect principally the liquefaction of the cilia by effecting cell membrane and surface tension of the ciliated cell as by pure sodium chloride¹³ also the proportions of calciums on the presence of which is dependent ciliary activity.¹⁴ Practical application is by the combination of preferably magnesium with sodium chloride which is antitoxic both to liquefying and calcium precipitating effects.

6. Strength of solutions producing effects by other than osmotic, detergent or electrolytic which are common ingredients in nasal solutions as menthol, eucalytol and camphor produce deleterious results varying with the strength of solution 1-5% and in the manner listed.

Conclusions—

1. Aqueous solutions on ciliated epithelium in the nose should be used circumspectly.

2. Large quantities, over a period of time, especially when forcibly applied, are contraindicated.

3. An isotonic amphoteric antitoxic solution at body temperature non-irritant solution for a short period of time is the best.

*Read before Section on Eye, Ear, Nose and Throat, Illinois State Medical Society, Peoria, May 17, 1933.

4. Colloid silver salt solutions are the least harmful and effect results by ionization and catharsis of glands.

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THE SURGICAL TREATMENT OF SPONTANEOUS AND TRAUMATIC DETACHMENT OF THE RETINA*

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Theories of the origin of detachment of the retina go back to the year 1818 when Wardsop both by clinical and pathological observations thought that it was due to a serous exudate from the choroid. In 1870, DeWecker was the first to point out the frequency of retinal tears and their pathological importance in detachment of the retina. Leber, in 1882, was the first to suspect that the primary lesion was in the vitreous. Leber, Vogt, Gonin, Lindner, Elschmig and others believe the cause of a detachment of the retina is the hole or tear in the retina.

Gonin's contribution to the pathogenesis of detachment of the retina and its application to the surgical treatment has stimulated much discussion and research. He believes that primarily there is a pathologic change in the vitreous, i.e., a partial liquefaction occurs, as is frequently seen, as fine floating opacities in senile and myopic eyes. A partial detachment and retraction of the vitreous follows, as a result of the

vitreous separating into a non-albuminous watery fluid and a vitreous gel portion. Subsequently, atrophic and degenerative changes occur in the retina near the ora serrata, since here it is the thinnest with the exception of the fovea and lacks the support of the optic nerve fibers and retinal blood vessels and is more vulnerable to pathologic changes as, senile cystic degeneration and chorio-retinal atrophy, consequently, it is here that holes and tears, in the retina are most common. Any abrupt movement of the eye or body or a contusion of the eye could cause a hole or tear to result in the atrophic and degenerated retina if the surrounding area was supported by a fluid vitreous. The non-albuminous watery fluid of the vitreous percolates through the hole or tear in the retina, becoming the subretinal fluid which detaches the rod and cone layer from the underlying pigment epithelium. Anderson points out that the invagination of the primary optic vesicle leads to the formation of two layers which later come into contact but do not unite. It is this contact line which appears to be a developmental weak spot that becomes the line of cleavage in retinal detachment. As the subretinal fluid increases in amount, the detachment increases in size. Both the pre-retinal and the sub-retinal spaces are filled more or less with this watery fluid which is a transudate and not an exudate due to inflammation. The vitreous gel retracts to the region between the equator and the ora serrata and usually shows extensive adhesions to the retina. The retina yields to jarring and a hole or tear results at the ora serrata or where the vitreous bands form adhesions to the retina. The outflow of the fluid vitreous through the hole or tear causes and maintains the detachment.

1. *Gonin's Operation*. Gonin believes that a detachment of the retina can take place only, if a hole or tear of the retina is present and reasoned that if the hole or tear was the fundamental cause of the detachment, the early evacuation of the subretinal fluid and closure of the hole or tear should result in a cure of the detachment. This he accomplishes by igni-puncture, using the Pacquelin cautery over the site of the hole or tear and causing an agglutination of the retina and choroid and obliteration of the hole or tear. This demands that an accurate external localization of the hole or tear must be made.

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For this purpose, the globe is divided into meridians corresponding to a clock dial. The pupil must be widely dilated. Ascertain the meridian upon which the hole or tear is located and the distance it is from the ora serrata by estimating the number of disc diameters it is situated from the extreme periphery of the visible fundus. We can now compute the distance the hole or tear is located from the limbus. The diameter of the disc is 1.5 m.m. and the distance of the ora serrata to the limbus is 8 m.m., therefore if we found the hole or tear located at 2 disc diameters from the extreme periphery of the visible fundus, the hole or tear would be located 11 m.m. from the limbus. The involved meridian being ascertained, it is indicated by two India ink dots on the limbal conjunctiva of the clock dial. Pass a knotted black silk thread through the further dot of ink from the hole or tear and then through the other dot of ink. Measure the distance of the hole or tear from the limbus along the meridian involved and indicate the location of the hole or tear with an alcoholic solution of gentian violet, where the cautery is to enter the globe. The meridian alignment should parallel these three points. A conjunctival flap is made over the area and a scleral trephine done over the hole or tear. A Graefe knife enters the trephine opening to pierce the choroid to evacuate the subretinal fluid, which allows the retina to fall back to its former place next to the choroid. The glowing cautery is now applied where the knife was withdrawn. The heat cauterizes the retina, choroid and sclera, forming a cicatrix which will close the hole or tear in two weeks. The essential points of Gonin's operation are: the finding of the hole or tear, its accurate localization on the globe, the evacuation of the subretinal fluid and the obliteration of the hole or tear by igni-puncture.

The contra-indications for Gonin's operations are: the inability to localize or the doubtful localization of the hole or tear, poor transparency of the anterior segment, extensive size of the tear, multiplicity of tears, location of tear at or near the posterior pole (22 m.m. from limbus is the limit), advanced age or poor general condition of the patient and the stabilization of the detachment with retention of fair vision.

Holes and tears in the retina were found in 77% to 100% of the cases of detachment of the

retina. The location of the tears are in the region of the equator or anterior to it, 66% were at the ora serrata. One or more defects were most frequently found in the upper or lower temporal quadrant. Holes and tears are rarely found posterior to the equator.

Seventy-five per cent. of the detachments of the retina were located in the temporal hemisphere of which 65% were in the inferior temporal quadrant and 10% in the superior temporal quadrant; 86% were in the inferior hemisphere of which 65% were in the inferior temporal quadrant and 21% in the nasal quadrant.

2. *Larsson's Diathermy Method.* The conjunctiva is stripped from the corneo-scleral margin over the area of detachment. The active electrode is applied with a weak current for 5 seconds to the sclera 8-9 m.m. from the limbus to avoid the ciliary body and lens. An opaque dark colored zone is produced and the sclera flattened out. One or two Elliott trephine openings are made in the sclera of the treated area and with a Graefe knife incise the exposed choroid and the subretinal fluid removed. The patient is kept in bed for 14 days with both eyes bandaged. Atropine is used while the eye is red. Larsson states that immediately after the operation, the retina is detached, but in favorable cases it becomes reattached in from 5 to 8 days. The reattachment occurs by producing an adhesive chorio-retinitis and lessening the secretion of the chorio-capillaris due to atrophy of the cicatrized choroid.

3. *Meller's Operation.* This is a modification of Larsson's operation, by preceding the application of the active electrode by 2 to 6 scleral trephines in the area of the detachment and in at least one of the trephine openings, the subretinal fluid is evacuated. A 3 m.m. active electrode is applied until a dry brown surface is produced. A binocular bandage is applied and the patient remains in bed for 2 to 3 weeks. The cauterized area of detachment shows chorio-retinitic atrophy with pigment formation. The early reaction is frequently a cystic detachment of the retina, even where no detachment previously existed, which later disappears. The rationale of the operation is to produce widespread adhesions between the retina and the choroid.

4. *The Guist Operation.* The conjunctiva is

anesthetized with the instillation of a 2% solution of Holocain and to favor the maximum rotation of the globe, the recti muscles in the field of operation are injected with 2% Procain HCL solution. The incision is made long and parallel with the limbus and over the insertion of a rectus muscle. The globe is rotated to give the necessary exposure of the sclera over the area of the detachment. The scleral trephines are made with 0.5 m.m. trephine, the number depending on the extent of the detachment. The scleral perforations should not include the choroid otherwise the vitreous will prolapse. The trephined scleral areas are excised exposing the choroid which is treated with potassium hydroxide pencils which are applied dry to the choroid for two or three seconds and then neutralized with 0.5% acetic acid and then irrigated with normal salt solution. Before beginning the chemical cauterization, see that the field of operation and the caustic potash point are perfectly dry. The number of trephine openings vary according to the case, from 5 to 30. The subretinal fluid can be drained by perforating the choroid through one or more of the treated scleral trephine openings with a punctum dilator. If the rectus muscle was cut at its insertion and a double armed silk suture placed in the stump, the muscle is now reattached and the conjunctiva sutured. A binocular dressing is applied and the patient kept in bed for several days and after 8 days is given the use of eyes, using the small aperture glasses.

According to Lindner, the Guist operation does not cause foreshortening of the retina, with resulting new tears and recurrences and does not require exact localization of the holes or tears. It does not seriously injure the retina as does the Pacquelin cautery, and choroidal hemorrhage is rare. Its main disadvantage is, it is time consuming, taking from 1½ to 2½ hours. There is also the danger of fistula formation and of not neutralizing the potassium hydrate and acetic acid and the entering of these chemicals into the vitreous, of producing an edema of the cornea and hemorrhage of the choroid. To reduce the liability of this, use a small blunt pointed probe instead of a knife. If one punctures the choroid, in making the scleral trephine, the eye may become soft, due to the premature drainage of the subretinal fluid or prolapse of

the vitreous and then it may become difficult or impossible to continue the operation.

We should now briefly consider the pros and cons of the above methods of operation for the cure of detachment of the retina. Gonin and his followers claim, it is only necessary to make a single and direct attack on the hole or tear in the retina and close it. Whether this procedure per se is insufficient as many claim and not as important as the production of extensive adhesions between the detached retina and choroid which would also include more or less of the hole or tear, is a question that the future must decide. Mayer has shown experimentally that the retinal hole or tear is not the only factor in maintaining a detachment of the retina.

Gonin insists that unless we accurately localize the hole or tear in the retina and permanently close it, the detachment will recur. Deutschmann does not believe that the retinal hole or tear is the primary cause because it frequently ceases spontaneously or after igni-puncture without healing the detachment. He believes the essential factor in igni-puncture is fixation of the relaxed retina to the choroid. DeWecker, Leber, Vogt, Gonin, Elschmig, Lindner and others believe, the retinal hole or tear is the primary cause of the detachment and that closure of the hole or tear is the prime factor while Deutschmann, Larsson, Meller, Guist, Linder and others take the view that it is not sufficient to treat the retinal hole or tear alone, but that the whole area of the detachment should form a complete adhesion between the retina and choroid. Of the four operations here described, two depend on diathermy (Larsson and Meller), one on igni-puncture (Gonin), and one on chemical cauterization (Guist). The electro-thermo-cautery should be substituted for the Pacquelin cautery because of the lesser liability of intra-ocular hemorrhage, and the production of new tears. Which one of these methods is most efficient and least injurious to the eye, the future shall determine. It is singular, that regardless of the methods used, the successful reports claimed for each is about the same, i.e., the results reported by Larsson, Meller, Guist, Lindner, Deutschmann and others are approximately as good as those claimed by Gonin who claims about 50% of cures, but others who have used his method could not obtain more than 15% in their com-

bined cases of cures and improvements. Guist and Lindner were dissatisfied with Gonin's method because they believed that it is not sufficient to treat the retinal hole or tear alone but that the whole area of the detachment including the hole or tear should be treated. The Gonin operation cannot be used in cases where it is impossible to find the hole or tear. It is difficult to locate the hole or tear and if one does not strike the hole or tear, one cannot expect a good result.

The question of how long the patient should remain in bed is an important one, but in these operations, there seems to be no unanimity and varies from a few days (Guist), to 28 days (Larsson) and the duration of the binocular compression bandage, from 8 days (Guist), to 14 to 21 days (Meller).

The results of Guist, Lindner, Larsson and Meller show that it is not necessary to localize the holes and tears, but rather to make an accurate external localization of the extent of the retinal detachment and attempt to cause an obliteration of the subretinal space with its holes and tears. The success of any of these operations depends upon the proper selection of cases, the accuracy of the technic, and the co-operation of the patient.

The prognosis depends to a large extent on the duration of the detachment; other factors being equal, the shorter the duration, the more favorable the outlook. From this standpoint, Gonin divides his cases into three clinical groups: 1, during the first three weeks; 2, from three weeks to three months, and 3, from three months to a year. His original teaching was that one should operate in three or four days after the onset. The amount of visual recovery depends upon the degree of degenerative changes that have occurred in the retina, the causative factor, the extent of the detachment and the presence of multiple holes and tears. Elschmig states that a retinal detachment is not cured when the retina becomes reattached; that vision is rarely restored even after a complete reattachment of the retina and a progressive loss of vision results. This brings up the question of what we should consider a "cure." The patient will judge the operative result solely upon the effect on his central visual acuity, while the surgeon may consider the ophthalmoscopic appearance of the de-

tachment or the result of the perimetric examination more important. The visual acuity, peripheral fields and the ophthalmoscopic appearance of the detachment should be recorded at frequent intervals during the period of observation. We should not consider a case of reattachment of the retina as "cured" unless no recurrence has occurred after a period of at least three years. The results of treatment should be classified as, 1, cured; 2, improved; 3, no improvement, and 4, worse. A good functional and anatomic result over a period of three years should be classified as "cured." Sourdille, who had unusually good operative results in 179 cases, after a period of ten years, was able to report but one cure.

Gonin, in 300 cases of detachment of the retina in each of which a retinal tear was found, localized and obliterated by igni-puncture, reports that in detachments less than three weeks old 66% were cured; between six weeks and three months old, 51%; and in more than three months, 37% were cured. One should not be discouraged by post-operative recurrence and in cases where the indications are still present for operative interference reoperation should be done, thus Gonin reports but 29% cured by a single operation, 15% by two operations, 7% by three operations, one case required four operations and two cases had six operations. Angler, using the Gonin method, operated on 40 cases of which 20 cases or 50% showed reattachment. In 75 cases at Moorfields using the Gonin technic, Shapland et al report 32% "cured" and 16% improved; recurrence occurred in 25% of the cases within 7 days to 8 months. Deutschmann, doing igni-puncture in 539 eyes, claims as good results as from the Gonin technic. Lindner reports good results in 50% of 27 cases using a modification of Guist's operation. Larsson, using his diathermy method, claims about 50% of cures in 50 cases. For comparison of the results of the operative and non-operative treatment of detachment of the retina with rest and general dehydration treatment, Darier gives the percentage of cures in the latter as 10%.

Poor operative results may be due to, the operation being too long deferred, the inability to obtain post-operative immobility of the patient, advanced age or poor general condition of the patient, large size of the tear, multiple tears,

extreme posterior location of the tear, in the aphakic group, Gonin did not obtain a successful result, predisposition to post-operative recurrence, too many operations, and the occurrence of operative complications as vitreous hemorrhage which occurs from 7 to 10 days after operation when the Pacqueux cautery was used, uveitis, traumatic cataract, and subretinal hemorrhage.

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DISCUSSION

Dr. Louis Bothman, Chicago: I would like to ask Dr. Yerger about his personal experience with these various types of operation. We have tried in private practice and at the University of Chicago the various operative procedures, and our experience with the Gonin operation has not been very satisfactory. We have had several cases where the results in the beginning were good, but almost invariably the retina became detached later on. In one case in particular the retina remained in perfect position for about fifteen months, after which there was total detachment, and this is the story with most cases of ignipuncture. Our best results have been with the Guist Lindner operation and while I cannot give the exact percentage, I should say that about 30 per cent. gave a very satisfactory result for a long

period of time. At the present time we are trying the diathermy operation but none of these cases were operated on more than six months ago. We do not know what the final result will be, but the early results are satisfactory. With the Guist Lindner operation about 30 per cent. have been satisfactory and the detachment has remained in place for periods of as long as a year and a half.

Dr. George Francis Suker, Chicago: I think the question of detachment of the retina is a very interesting one, and looking back over a short period of time I do not know that the final results obtained are much better than those in years gone by. The patients have everything to gain and nothing to lose, it is true, and this has to be considered. In my opinion, in some operations, particularly the Lindner (not Guist), and at times the Gonin, truthfully a Lindner operation, do cause in some instances a shrinkage of the globe. I have some such cases on record.

Of all the operations, I think the Lindner or diathermy are the most justifiable. So far as recurrence of the detachment is concerned the Lindner operation offers the best results, but any recurrence at any time is more or less fatal. I have one under observation at the present time. The first ten days after operation there was an almost perfect field of vision with normal vision where previously it was just fingers in the temporal area. Within ten days of operation there was a very large secondary detachment in the inferior quadrant of the retina. Patient was put back to bed and subretinal fluid drained; more or less reattachment followed, but finally it detached again. This is a type of cystic detachment which is apt to follow any operations, particularly of the Lindner type. I do not believe that it is absolutely necessary to actually touch or cauterize the hole in order to secure reattachment. As long as you have an area of active inflammatory reaction in choroid and sclera surrounding the hole a reattachment is likely to be obtained. Repeated operations seldom give any worth while end results. The earlier the operation the greater chances for a success. Detachments of very long standing yield very poor results—that is, you can obtain reattachments, but functional results are usually nil.

In using the trephine it has been my custom to trephine in such a way as to have the sclera attached in a little area of the trephine and then clip it off. It is not necessary to have the entire sclera removed from the choroid, so long as there is only a thin section of sclera allowing choroid to shine through. The application of caustic for several seconds is sufficient. If necessary you can scrape out the remaining portion of the sclera, but as long as you have a pinpoint opening through which the choroid shines you can cauterize just as efficiently as in a large hole.

I think it is obligatory to put these patients to bed and to apply stenopeic glasses to the eyes and keep them flat before you operate for about ten days, with sweats and salt free diet, not necessarily bandaging them. This will give you mechanical assistance as the tendency is for the retina to settle down. This regime

will allow you to study the case better and often locate holes which were previously hidden from view by the folds.

I think it is essential to have your patient wear a glass with a pinhole opening for sometime after a successful operation. This is as near a functional aid as you can give in keeping the eyes quiet and yet function without unduly disturbing the retina, as in this wise the ocular rotations are extremely limited.

Dr. Earl L. Vernon, Chicago: Dr. Yerger states that the best results were obtained when operation was performed early. The thing I have to decide, in many cases, is when did the detachment occur? Often, the patient gives the history of a recent trivial injury with resulting detachment, large or small, as the case may be. I have not been able to tell by looking at it, if the detachment is a month or six months old; of course, we know they tend to become total. Is there any way to determine the age of the detachment in these so-called early cases other than depending upon the history of the case?

If possible, I should like some discussion on the point.

Dr. C. F. Yerger, Chicago, (closing): Replying to Dr. Bothman, my experience has been that we did not get as good results from the Gonin as we did from the Lindner operation, as Dr. Suker prefers to call it. I disagree with Dr. Suker on the comparison between results now and years ago. I think we are getting better results now, with the Guist-Lindner operation. Dr. Suker's point about a stenopeic lenses is important. I think they should be used in every case.

We should operate on these cases early, as the results are much better. Gonin has recommended operation as early as three or four days. In traumatic cases, I believe we can be more conservative. We should not operate right away, but can afford to wait for a week or two to see if the case will respond to the non-operative treatment satisfactorily.

TRICHOMONAS VAGINALIS

A Report of 300 Cases in Pregnancy With Complete Puerperal Records

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CHICAGO

The present study, which includes complete prenatal and postnatal records, was undertaken to determine the role of *Trichomonas vaginalis* in pregnancy, labor and the puerperium. The material for this investigation was obtained from the prenatal clinic of the Cook County Hospital at Chicago, the patients having been selected at random.

Although *Trichomonas vaginalis* was described by Donne almost one hundred years ago, it is

only in recent years that much consideration has been given to this organism. In the recent literature, we find various opinions as to the incidence and pathogenicity of the organism and its supposed effects. Conflicting statements have been made by many investigators, especially in regards to the relation of *Trichomonas vaginalis* to pregnancy and the puerperium.

That *Trichomonas vaginalis* is a common invader of the vaginal tract is now an accepted fact. The role of this organism in the vaginal flora is, however, very little understood.

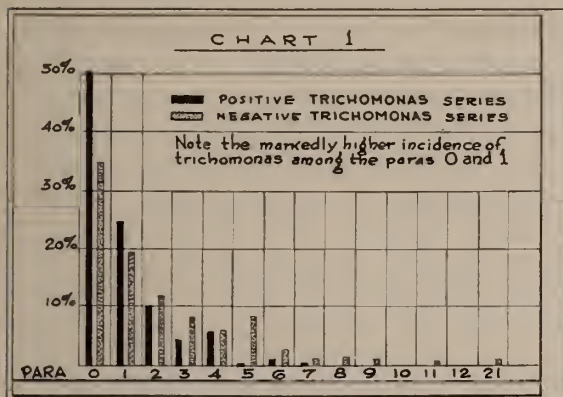
Trichomonas vaginalis is a pear shaped protozoan, slightly larger than a polymorphonuclear leucocyte, having free flagella at the anterior end, an undulating membrane extending to near the middle of its body, and an axostyle, posteriorly.

In fresh material the protozoa are extremely active, moving with a jerky forward motion and spinning counterclockwise on their long axis. Observing the protozoan on the slide, degeneration occurs, but active motion is often present for several hours. Studying the protozoan after marked degeneration has taken place, we find that the flagellate has assumed an ameboid appearance with pseudopodia extruding from its surface, and its body being shrunken. As degeneration proceeds the motility diminishes. Very often slides made immediately after withdrawal of the discharge show *Trichomonas* simulating the above pictured organisms with irregular outlines and sluggish movements, or spinning on its long axis without forward motion. Whether these organisms are in a process of degeneration or a mutated form produced by an unfavorable environment, or perhaps are of a different strain remains to be proved, but it is significant that they are generally found in those cases which present no symptoms.

In this series, all examinations were made from fresh hanging drop slides by diluting a small amount of vaginal discharge (which was obtained by speculum) with warm saline solution. Under the high power, the *Trichomonas vaginalis* were easily seen and were usually plentiful when present. In about 14% of the cases, however, diligent search did not reveal more than one or two organisms in an entire slide, and often only after exhaustive examination of repeated slides.

Accompanying the *Trichomonas vaginalis*, one

sees in addition to the usual debris and epithelial cells, some leucocytes and a fair amount of bacteria, mostly motile rods. After the examination of many slides, one is impressed with the apparently definite relationship of these three constituents and it is noteworthy that in those cases in which the leucocytes are very few or the bac-



teria excessively numerous, the protozoan is usually not found.

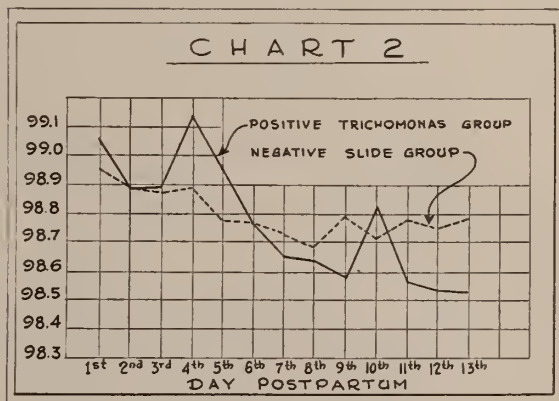
Incidence. Statistics based on recent investigations show the incidence of *Trichomonas vaginalis* to range from 6% to 75%. In this series, it was interesting to note that at times both extremes were reached for rather long periods, and had the series been small, a figure approaching either of the extremes would have resulted.

One of the three hundred cases examined, one hundred were found to be positive for *Trichomonas vaginalis* giving a general incidence of 33%. 200 of these women were white, and of these 50 or 25% showed positive slides. Of the 100 colored women 50% were positive for *Trichomonas*. This markedly higher incidence among the colored women is in keeping with reports from other investigators, and is as yet unexplained. It is probably due to a difference in personal hygiene. This same factor probably is responsible for the variations in the reported incidence of *Trichomonas vaginalis* since the class of patients examined may vary in the different series.

Para and Gravida? At the time of examination, the patients in this series were all in their ninth month of pregnancy. Of the patients with *Trichomonas* 51% were nulliparas, 24% were primiparas, 10% para three, etc., a positive slide being found in one para thirteen. Of the negative series only 35% were nulliparas, 20% primiparas, etc. A study of table 1 will show that

Trichomonas vaginalis was much more common in the nullipara than in the other types. It appears incongruous that a supposedly pathogenic organism should be encountered more frequently in nulliparas than in multiparas. This finding also tends to cast doubts upon the statements of Dubrovin² and others that the source of invasion may be through sitz baths or other similar routes; for in that case infection would surely be more common in the women whose genitals were more gaping thereby affording easier entrance to the organism.

Checking to see what role *Trichomonas* may play in the production of abortions, it was found that in the 51 nulliparas of the positive series, this was their first pregnancy in all cases. Of the 70 patients having negative slides, 10 had had one or more abortions. In the primiparas there was a slightly higher incidence of abortion in the positive *Trichomonas* group. The significance of this finding cannot be evaluated at this time, but it is certainly unusual to find 51 gravid nulliparas (picked at random) not a single one of which had ever had a previous conception. While this evidence is too meager to be entirely convincing, it does, when coupled with previously stated facts, tend to make one believe that *Tri-*



chomonas vaginalis may play a very useful role in the vaginal flora.

Age. The ages of the patients in this series ranged from 16 to 48. The average age of the group positive for *Trichomonas* was 23.3 years as against 26.3 years for those patients whose slides were negative. This apparent difference is in part due to the fact that the positive group had more nulliparas and therefore more patients whose ages we would expect to be lower. On the

whole as has been pointed out before by other investigators, age was not an important factor.

Symptoms. Davis³ states that he did not find a single case harboring *Trichomonas vaginalis* which was entirely free from symptoms of leucorrhea or vaginitis. Bland⁴ reports that only 13% of the patients complained voluntarily of symptoms but that a larger number admitted symptoms upon questioning.

In this series the vast majority of the cases were without symptoms. 15% of the patients complained of leucorrhea. 4% complained of soreness. Physical findings on three of these patients elicited a sub-acute vaginitis, the fourth patient having a very severe vaginitis. There are the cases which are described as *Trichomonas vaginalis* vaginitis. This distinct vaginitis was manifest in only 4% of the patients harboring the protozoan. Dysparunia, as may be expected, was a constant symptom in the patients who had a picture of inflammation.

The discharge is usually described as being profuse, thin, yellowish, bubbling or foamy, and having a marked irritating quality which is responsible for chafing and irritation of the external genitals. This was found to be the usual picture in the patients who had a marked discharge. However, as previously stated only 15% of the patients had marked discharge. In the majority of cases the secretion differed from the above picture, the organism being found in almost every type of discharge.

Labor. The conduct of labor was exactly the same for both groups. A record was kept to determine any differences in presentation or in the course of labor.

As far as presentations are concerned there was no difference except that there were six L. O. P. presentations in the normal group and none in the *Trichomonas* group. This may undoubtedly be ascribed to coincidence. As to the course of labor, the labors of the patients with *Trichomonas* were of somewhat longer duration, but this difference is only apparent because of the greater number of nulliparas in this group. Checking the labors of the nulliparas in both groups there is no appreciable difference in the duration of any of the three stages of labor.

Obstetrical maneuvers were completed without knowing the patient's status as to *Trichomonas* and the result was a slightly lower inci-

dence of accouchers' force among the patients with positive slides. The only difference which I am able to note is increased pain in those patients having definite vaginal inflammation. This would naturally be expected. It is interesting to note that the one case having a marked acute vaginitis failed to heal after episiotomy, and was the only case in which sloughing occurred.

Puerperium. The prime purpose of this study was to determine whether or not *Trichomonas vaginalis* constituted the grave post partum danger ascribed to it by Bland,⁵ Schmid and Kamniker,⁶ and other recent investigators.

Both groups of patients received the same puerperal treatment. They were administered to by the same attendants, the patients being housed in adjoining beds of the same ward. The puerperal data was obtained by reviewing the patients' charts after discharge from the hospital. The peak temperature of the patient for each day was recorded and a daily average of these peaks was obtained for both groups. It is from these figures that the curves shown in Chart 2 were made.

An analysis of the graph shows the positive *Trichomonas* group to have a rise on the fourth day and then rapidly subside, reaching a much lower level than the normal group by the end of the 13th day. From a somewhat more liberal standpoint, the graphs may be said to almost coincide since the greatest variation is less than 0.3 degrees.

In order to have a more detailed picture of the cases with temperatures, I isolated all cases of each group having temperatures of 100⁴ or over at any time. Of these there were 17 in the group of positive *Trichomonas* and 30 in the negative group giving a percentage of 17 and 15 respectively. Table 1 explains the cause for the temperature in some of the cases.

A review of the causes of these temperatures (where cause could be determined) shows that the *Trichomonas* was not the causative agent for the slightly higher incidence of these temperatures in its group.

I believe that the evidence given covering as it does a fairly large number of cases, absolves the *Trichomonas* as a causative organism in puerperal morbidity.

SUMMARY AND CONCLUSIONS

300 patients in their ninth month of preg-

nancy were examined for *Trichomonas vaginalis*. 50 out of 200 white women and 50 out of 100 colored women were found to harbor the organism.

The incidence of *Trichomonas vaginalis* was found to be much greater in nulliparas than in multiparas although age is apparently an irrelevant factor.

The large majority of patients with *Trichomonas vaginalis* had no complaints.

Trichomonas vaginalis may be found in almost any type of discharge, the characteristic discharge being thin, yellowish and foamy.

Trichomonas vaginalis is not a causative agent in abortion.

Trichomonas vaginalis does not cause increased difficulty during labor unless there is an associated vaginitis.

Trichomonas vaginalis does not cause or increase puerperal morbidity.

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TABLE 1

Normal Group	KNOWN COURSE OF TEMP.	Pos. Trich.
Analysis of Cases Having Temperature Above 100°		
0	Breast Abscess	1
0	Protracted Labor. Forceps unsuccessfully applied	3
0	Protracted Labor. Craniotomy	1
1	Protracted Labor. Dystocia	1
0	Stillbirth	0
2	Puerperal Sepsis	0
0	Metritis	1
0	Twins. Added manipulation	1
0	Infected Episiotomy	1
1	Bronchopneumonia	0
2	Pyelitis	0
1	Uterine pack for hemorrhage	0
1	Forceps	0
1	Cesarean Section	0
1	Previous Section. Now delivered from below	0

MEDICAL LEADERSHIP AMONG LAY GROUPS*

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In this paper I wish to present to the Secretaries of the County Medical Societies a plan which is designed to combine the community health activities of lay groups into county units under medical leadership, thus avoiding duplication of effort as well as enabling the various interested agencies of the county to work efficiently along definitely planned lines.

The first step in this program is the full understanding and approval of the County Medical Society, who appoint a committee of five members who are enthusiastic about the plan. One member of the Medical Committee is to serve as chairman of the general county committee.

The membership of this general county committee consists of a representative of organized medicine (the chairman of this small medical committee who has already been appointed), organized dentistry, the Illinois Federation of Women's Clubs, the Illinois Parent-Teacher Association, the county and the larger city superintendents of schools, and, not to exceed three other representatives of active local groups.

This county group should operate under the leadership of the chairman of the medical committee, with the other members of the medical committee serving in an advisory capacity to the chairman. In general, it may be well to choose as secretary of this county health council, a

*Presented before the Secretaries' Conference at Peoria, May 16, 1933.

Federated Club woman because her State Chairman is a medical woman.

It has been found most effective to suggest that each of the representatives have a sub-committee. Thus the County Superintendent of Schools could have a committee on schools, and so on.

Once the group is organized, the next step is to decide on the program. The most practical procedure is for the Advisory Committee from the County Medical Society to invite the State Department of Public Health to help them survey the county and find its actual needs. There may be found need for 1. immunization against diphtheria; 2. vaccination against smallpox; 3. examination of the preschool child; 4. education in prenatal care; 5. restoration of crippled children; 6. educational work along the lines of giving information regarding the prevalence of rabies, eye infections, etc.

It may be the decision of the county health council to work on one project at a time until such work is cleaned up in the county, or it may be found desirable to select several lines of activity. At any rate, a definite program should be worked out, plans of procedure decided upon, certain portions of the work allotted to the various members, and all details thoroughly settled on that there may be concerted action.

Very naturally many matters peculiar to the community will come up and some will probably be difficult to settle, but can be satisfactorily ironed out with frank discussion, a sincere desire to cooperate, and an earnest effort to attain a definite objective.

It is the policy that every parent who is not dependent should pay a fee for services rendered. The plan provides that the Medical Society should immunize, vaccinate, or conduct other repair work—whether it be the removal of tonsils and adenoids, the correction of dental defects, or the management of crippled children, in the manner they decide most suitable to the situation, in their offices, at schools, in clinics.

Each organization represented on this county health council should work to find the children who are handicapped or who need examination or medical attention. Of course, certain particular duties will naturally fall to each of the organizations fitted by their nature for certain phases of work.

With the personnel of the county health council selected, the needs of the county analyzed, the projects chosen, the next step is the planning of publicity to stimulate interest in the activities of the council. Through the Superintendent of Schools various meetings could be arranged, lectures planned through the publicity chairman, speakers sent to the various clubs in the county. The newspapers could be supplied with interesting material regarding the health projects. The Chamber of Commerce, the men's service clubs, and the churches all offer opportunities for emphasizing the value of this work.

The State Health Department and the Educational Committee of the Illinois State Medical Society will assist in providing lectures, moving picture reels, charts, exhibits, etc., and the supervising nurse in the district will give unlimited support to the county council. A medical representative of the Division of Child Hygiene, State Department of Public Health, will be glad to meet with the council, answer questions, and give any advice desired.

THE DIAGNOSIS AND TREATMENT OF ANEMIAS OF INFANCY*†

ARTHUR F. ABT, M. D.

CHICAGO

In the past few years a great deal of interest has been attracted to the general subject of anemic conditions, and more attention is being paid to the anemias of infancy. Before we may adequately discuss this subject, the normal hemoglobin and red cell values for the newborn period and the first months and years of life should be ascertained.

The fetus in utero is an environment of low oxygen tension, which accounts for the polycythemic blood with high hemoglobin and red cell values which the newborn infants exhibit. It is not unusual at birth to find 120 per cent. of hemoglobin and over six million erythrocytes in the circulating blood of the newborn. This polycythemia is a compensatory mechanism on the part of the fetus, to offset the lowered oxygen tension of its intrauterine life, just as an acclimatization to high altitudes and lowered oxygen tension, causes a polycythemic blood to accom-

*From the Department of Pediatrics, Northwestern University Medical School, Chicago.

†Read before the Section on Medicine of the Illinois State Medical Society, Peoria, May 17, 1933.

modate the organism to such an environment.

With birth the infant is delivered into the increased oxygen tension of atmospheric air, and there is a gradual reduction of hemoglobin and red cell values, most rapid in the newborn period. All evidence points to an increased hemolysis of circulating erythrocytes in the newborn period. The liberated hemoglobin is in turn broken down into bilirubin and iron. Simple icterus neonatorum is probably an indication of this excess hemolysis, and an increased indirect Van den Bergh reaction and high icterus index in the newborn period substantiate this fact.¹

The iron depot theory of Bunge² which assumed that iron was stored in the fetal liver during the last few months of intrauterine life to be used by the infant during the first six to twelve months of its life, as a source of the iron for new hemoglobin formation, is probably incorrect. Bunge's theory was also used to account for the more rapid drop in hemoglobin and erythrocyte values noted in premature infants, the so-called "physiologic anemia of prematures," by assuming that the premature birth interrupted the iron deposition in the fetal liver.

Actually, the livers of newborn full term or premature infants contain little iron.³ As hemolysis of the polycythemic blood progresses and the liberated hemoglobin is broken down into bilirubin and iron, the liberated iron is in part picked up and stored in the liver, spleen and other organs, and in part is excreted through the intestinal tract.⁴ This iron may again be utilized to form new hemoglobin as the need arises; just as in an internal hemorrhage new blood formation progresses rapidly as the products of the extravasation are resorbed and reutilized.

The first step in the drop of the high hemoglobin and red blood cell values present at birth, is the increased hemolysis occurring during the first few weeks of life, due to the acclimatization to the increased extrauterine oxygen tension. As the infant rapidly grows to double its birth weight, the total blood volume must increase correspondingly. Together with and following the early destruction of blood in the young infant, there must follow a rapid formation of new blood to supply the necessary elements for the increasing blood volume corresponding with the infant's rapid growth.

The early hemolysis of red blood cells ceases,

and the bone marrow becomes highly active, using as building stones for new blood formation the products of the early destruction of erythrocytes. Thus the excess of iron picked up and deposited in the liver and spleen is again utilized to accommodate for the rapidly increasing blood volume, and sometime after the fourth month of life the excess of iron has been used up. It will then be necessary to obtain sufficient iron from the diet for future blood formation.

The premature infant, born with a smaller total blood volume than the full term infant, and growing at an increased rate, simply exaggerates the normal process in the full term infant. New blood formation may be somewhat less active due to the relative immaturity of the blood forming organs. This is substantiated by the greater degree of anemia in those infants of 6 to 7 months gestation, than in those of 8 months gestation.⁵ The more premature the infant the more severe the anemia which will develop. Thus, in the premature we have less total blood to start with; a polycythemic blood at birth, a rapid hemolysis and blood destruction for the first few weeks, a more rapid growth than the full term infant with a greater demand for blood formation to accommodate the increased blood volume, and somewhat immature blood forming organs to fulfill the demands. The total amount of iron and building stones is less than in the full term infant, and probably more rapidly used up somewhere from the eighth to tenth week of life, when the hemoglobin and erythrocyte values are approaching their lowest values.

These normal decreases in the hemoglobin and red cell values can best be graphically shown.

Bearing in mind these normal figures for hemoglobin and red blood cell values, we may now consider some of the anemias of infancy.

A. ANEMIA OF THE NEWBORN

Anemia may manifest itself in the newborn infant, and under the title, erythroblastosis of the newborn two clinical entities have been described, "Anemia of the Newborn, and Icterus Gravis Neonatorum with Erythroblastosis."

It would be only natural to search for a congenital cause for the anemia of a newborn infant, and some illness on the part of the mother might explain the anemic condition of her newborn infant. However, well authenticated cases of blood disease or anemia on the part of the

mother have not been transmitted to the newborn infant. Even pernicious anemia on the part of the mother has not been transmitted to the infant, and authentic cases of leukemia in pregnancy have terminated uneventfully, as far as the infant was concerned.⁶ Recent studies have also shown that the anemias of pregnant mothers are not transmitted to their offspring.⁷ Anemia of the newborn has been used to designate a group of reported cases in which newborn infants of healthy parents are born in normal labor, and from whose history hemorrhage or loss of blood has been carefully excluded.⁸ These babies become profoundly anemic during the first fourteen days of life. Pallor of a sheet-like whiteness may be the only symptom, though reports of jaundice and slight edema have also been noted, as well as a familial history. Recovery has been observed, both without and with treatment in the majority of the cases reported. The blood picture is at first of a mild hyperchromic type with nucleated red blood cells moderately increased.

The associated jaundice, edema and familial history, together with the autopsy reports and blood picture have led me to group these anemias of the newborn as mild manifestations of erythroblastosis fetalis.⁹

B. ERYTHROBLASTOSIS IN ICTERUS GRAVIS NEONATORUM

Under the title icterus gravis neonatorum, a group of newborn infants have been reported, who either at birth or a few hours thereafter, develop a rapidly deepening jaundice, associated with anemia, and a great number of immature erythrocytes in the circulating blood. Associated with the jaundice, anemia and erythroblastic blood picture, are familial history, slight edema, extensive extramedullary hematopoietic foci in the liver and various organs, with increased iron deposition, and occasionally a nuclear icterus in the brain. The blood picture is characterized by a severe hyperchromic anemia, with great numbers of immature red blood cells and occasional young white cell forms. Poikilocytosis, polychromatophilia, with stippling and increase in reticulated red cells are noted.

The characteristic blood findings may be summarized as a severe hyperchromic anemia of hemolytic origin with a marked erythroblastosis.

The icterus index is markedly increased and a

biphasic Van den Bergh reaction is present. From present knowledge it may be assumed that the etiology of this condition can be best ascribed to an *embryonal persistence of hematopoiesis of erythrocytes in various organs*.⁹

It should be pointed out that actual sepsis in the newborn and congenital syphilis may cause severe anemia and jaundice in the newborn infant.⁹

C. INFECTIOUS ANEMIAS

The anemias that are caused by and accompany the acute infections, especially the simple respiratory diseases, are probably the most common encountered in young infants. The anemia due to infection is however, not an entity, but merely a symptom and will vary according to the direct or indirect effect the infection may have on the blood forming organs. The infection may cause a diminished production of erythrocytes by a so-called toxic suppression of the bone marrow; or a diminution of erythrocytes by increased hemolysis, which would be termed a hemolytic anemia. There may of course be a combination of both mechanisms in any given case.

The anemia in these mild infections is usually of a slight and secondary nature, and will yield quickly as soon as the infection has been cleared up. However, a succession of colds or upper respiratory infections may produce a more severe anemia, and the anemia in turn aggravates the infection through a lowered resistance on the part of the infant, rendering him more susceptible, and the infection more difficult to clear up. Thus the more infection the more the anemia, and the more the anemia the more susceptible the infant is to infection.

It should be noted in this connection, that as long as the active infection is in progress, it is extremely difficult to permanently effect the anemic condition by any form of therapy. It is only after the baby is afebrile and on the way to recovery from his infection, that therapy will be at all effective (See Table 2)

Case I: The infant at birth was a male premature of 33 weeks gestation and weighed 1,690 gms. The baby was born on July 25, 1929, and discharged from the premature station at the age of 5 weeks in excellent physical condition, weighing 2,085 gms. There had been no difficulty in nursing, no cyanotic spells, nor abnormal symptoms noted during the newborn period.

The infant returned regularly to the outpatient department for examination and dietary instruction. At 3

months, egg-yolk was added to the diet and at 4 months, cereal feeding was started.

At 4½ months of age the infant weighed 5,500 gms., and it was first noticed that he was extremely pale. At this time vegetable soup was added to the diet.

At 6½ months of age the infant was still quite pale and iron and ammonium citrate, gr. 1 daily was administered.

At 8 months of age more vegetables and fruits were added to the diet, and at 9 months the pallor was still marked and the infant *had had a mild attack of rhinopharyngitis*, with low fever and slight diarrhea. Liver and beef juice were added to the diet and the iron and ammonium citrate increased to 1½ gr. daily.

At 10 months of age he was still pale and sun-baths were started. At 1 year of age, it was noted that he was still markedly pale, and the iron ammonium citrate which had been continued for 5½ months was stopped, and sodium cacodylate, gr. 1, bi-weekly injections by hypodermic were continued for 1 month.

At 13 months the infant suffered another mild attack of rhinopharyngitis with diarrhea, and the pallor became more intense. At 14 months of age liver and other meats were added to the diet, and at 15 months, spleen marrow extract, 1 dram, three times daily after meals was started.

At 19 months of age, after several upper respiratory infections, the infant showed a lemon-yellow pallor, the gums, lips, buccal and conjunctival mucous membranes were markedly pale, as were the finger nail beds and the ear lobes. The spleen was firm, enlarged one finger breadth below the costal margin. The appetite was poor and the infant not gaining well. However, he was free from colds at this time.

At 20 months of age the spleen marrow extract was discontinued, and liver extract with iron, E. Lilly's, No. 55 was started. In the accompanying Table 2 will be noted the complete blood findings. In 3 weeks a remarkable improvement was noted, both in the infant's appearance and in the detailed hematologic study.

After a subacute infection of a longer period and greater severity the recovery from the anemia may be prolonged. Such an instance may be illustrated by the records from a child who had recovered from a mastoidectomy complicated by a jugular thrombosis and sepsis. (See Table 3.) The anemia was months in yielding after all infection had subsided. The chronic infections are usually accompanied by a low grade anemia, depending on the severity of the infection and the reaction of the individual.

I have recently observed a 3 year old child with a severe chronic dysentery of 5 months duration, accompanied by a marked secondary anemia.

C. INFECTIOUS-ALIMENTARY ANEMIA

Dietary or nutritional errors, which by lowering resistance may be complicated by infection

and thus lead to anemia. An excellent example of this association is the anemia which often accompanies a severe rickets. However, simply healing the rickets will not cure the anemia. By healing the rickets and improving the general nutrition, we are also lessening the incidence to infection, and the anemia will then rapidly yield to treatment.

D. ALIMENTARY ANEMIA

The anemias of purely alimentary or nutritional origin have been long considered in etiologic discussions, as having an important place in the classification of the anemias of infancy.

We may recall that following the early hemolysis of excess red blood cells in the newborn period, a certain supply of available iron is present to meet the demands of rapidly increasing blood volume which corresponds to the general rapid growth of the infant in the first half year. We then realize that the building stones for new blood formation may be used up if new materials are not furnished in the diet. Two facts should be here noted. Mackay¹⁰ has observed that those infants with lower birth weights tend to have lower hemoglobin values as they develop. In other words, the baby with the lower birth weight is more rapidly growing, and therefore, will exhibit a greater demand for new blood formation than the heavier, slower growing group.

Further, milk, both human and cow's, is low in iron content (see Table 4). As cow's milk contains less iron, it follows that artificially fed infants tended to show lower hemoglobin curves than wholly breast fed infants. Krasnogorski,¹¹ in metabolism experiments showed that the iron retention of infants on human milk was greater than that of infants on cow's or goat's milk. It has been generally conceded that goat's milk anemia corresponds to the same essential etiologic factors as cow's milk anemia.¹²

There is good evidence to believe that alimentary or nutritional anemia is caused by a simple insufficiency or lack of blood building material, especially iron, in the diet. The older theories proposed such as hereditary predisposition; injurious products in cow's milk (fat injury of Czerny); lack of vitamins; lack of fresh air and sunlight; and functional weakness of blood forming organs, need no longer be considered.

Just as other imbalances in infant nutrition may produce disturbances, it can be said that

alimentary anemia is not directly due to an injurious effect of cow's milk or any of its constituents. The same anemia may develop in an exclusively breast fed infant.

The whole nature of the process depends on the proper supply of the necessary blood building materials, which the infant on an exclusive long continued milk diet lacks. The error is not one of commission, but rather one of omission. It is not what we are giving the infant, but what we are failing to give him that is causing the anemia.

The early addition to and balancing of infant diets, which is becoming more and more of common usage and knowledge, is greatly reducing the incidence of pure alimentary anemia.

E. VON JAKSCH ANEMIA AND ERYTHROBLASTIC ANEMIA OF COOLEY

The anemia described by Von Jaksch as "Anemia Infantum Pseudo-Leukemia," occurs in infants from six months to two years of age.¹³ It is characterized by a severe anemia, leukocytosis, and with many nucleated red blood cells and other immature cells in the circulating blood. An enlargement of the liver and spleen is also present. The condition has been associated with rickets and infection, and is probably a severe form of secondary anemia due to the association of these two conditions.

Erythroblastic anemia is a rare form of anemia first described and named by Cooley,¹⁴ who differentiated it from Von Jaksch's anemia. It occurs in infants of families originating in Mediterranean countries and is of congenital, familial and racial incidence. It is a slowly progressing anemia with large numbers of nucleated red cells in the peripheral blood. There is enlargement of the liver and spleen, a mongoloid facies, and a characteristic change in the bones on x-ray, which show a thinning of the cortices and a widening of the medullary portion, with prominent trabeculation and radiating spicules from the inner table of the skull.

Anemias with Leucopenia. In this group, there are reported four separate types of cases; agranulocytic anemia with angina; aplastic anemia; aleukemic leukemia and sepsis with leucopenia. All of these types begin with an insidious onset, and later develop fever, pallor and progressive anemia with leucopenia. The course is generally fatal within several weeks to months. Differentiation may be extremely difficult, as has

been pointed out by Bigler and Brennemann.¹⁵ In cases of aleukemia Isaac A. Abt¹⁶ has noted the extreme difficulty of differentiation from aplastic anemia, which may be possible only at autopsy.

Treatment of Anemia. In all cases of suspected anemia in infants, it is essential, as has been pointed out, to consider the normal decline of hemoglobin and erythrocytes for the various age periods. Further, the less the birth weight and the more rapid the growth, the greater the expected lowering of these values may be. Breast fed infants on the whole, may have anticipated higher values than artificially fed babies.

Whether the mechanism be infection with blood destruction and toxic suppression of the bone marrow, or omission of blood building materials from the diet in nutritional anemia, the general form of treatment will follow the same outline.

As has been shown in anemia due to infections, all attempts at treatment are useless until the acute infectious process has been overcome.

The use of iron in the treatment of anemia is of ancient origin, and recently there has been a tendency toward the use of larger doses than formerly. Iron may be given as reduced iron, ferrous and ammonium citrate or saccharated ferrous carbonate in doses of from 0.5 gm. to 1 gm. daily. Organic iron compounds are no more effective than the inorganic. Copper has no effect on red cell formation and in the absence of iron it is valueless in the treatment of anemia. In combination with iron it is said to cause a rise in hemoglobin. It may be given as a 1/2 per cent. solution of crystalline copper sulphate, and in the proportion of 1 cc. per kilogram of body weight. Others recommend 20 mgm. of copper per dose, combined with iron.

Liver and liver abstract have been used in pediatrics for the treatment of anemia since 1912, when Czerny and later Kleinschmidt recommended the usage of liver soups as a treatment for alimentary anemia and as a substitute for milk protein in cases of exudative diathesis. A decade later, Minot first proposed the use of liver for the treatment of primary anemias and Whipple developed the secondary anemia fraction of liver extract.

There are many preparations of liver, iron and copper now available for the treatment and prevention of infantile anemias.

Liver extracts; liver extract and iron or copper; desiccated hog stomach with iron; iron and copper; malt and iron extracts; cereals containing alfalfa and bone meal to increase iron content; spleen marrow extracts; and even a sugar to which iron and copper have been added are all available, and every clinician has his favorite preparation. I know of one clinician of long experience, who favors cooking oysters in the baby's soup on account of the prodigious liver of this mollusk, as his favorite method for preventing and curing infantile anemia.

Transfusion, intravenous or intraperitoneal, is

indicated in the severe secondary anemias after hemorrhage; in grave blood diseases where there is a failure of the blood making mechanism to produce sufficient new cells. Also in those conditions where there is active hemolysis transfusion is indicated, and in the infectious diseases associated with anemia where one hopes to combat the infection as well as the anemia, to introduce new antibodies and to tide over a critical period. Some have found intramuscular blood injections of value and others recommend intraperitoneal injections of iron.

TABLE 1. CLINICAL CLASSIFICATION OF ANEMIAS OF INFANTS

1. Premature anemia—twins—full term		
2. Erythroblastosis—anemia of newborn	(a) upper	{ Rhinopharyngitis Otitis
3. Infectious anemia: A. Acute: 1. Respiratory		
	(b) Pneumonia	{ Grippe Bronchitis
		2. Pyelitis, nephritis, furunculosis, dysentery, typhoid, etc.
		3. Sepsis
	B. Chronic:	
		1. Tuberculosis
		2. Congenital syphilis—early, severe late, mild
		3. Chronic pyogenic infections, etc.
4. Infectious—Alimentary Anemia		
Nutritional errors plus infection		
5. Alimentary:		
1. Cows' milk anemia		
2. Goats' milk anemia		
3. Unbalanced Iron poor diet		
6. Von Jaksch—Anemia—Erythroblastic anemia (Cooley)		
		{ 1. Toxic—lead, pot, chlorate, benzol and other poisons
		2. Parasitic—Tape worm—hook worm—malaria
		3. Neoplasms
7. Specific Diseases		{ 4. Splenomegalies
		5. Scurvy—purpura
		6. Sick cell
8. Hemorrhage—acute blood loss		

TABLE 2. ANEMIA WITH RAPID CURE AFTER RESPIRATORY INFECTIONS

	Birth 7-28-29				
Age & Date	3-10-31	4-9-31	4-30-31	5-21-31	6-23-31
R. B. C.	3.6	3.4	5.0	5.2	5.3
HGB.	36%	36%	85%	84%	80% I (Tallquist)
W. B. C.	12,300	15,000	14,500	12,900	.....
Plat.	200,000	240,000	.....	.....	340,000
P. M. N.	35%	32%	37%	46%	27%
Lymphs.	57%	63%	56%	43%	65%
Eos.	1%	0	1%	2%	1%
L. Mono.	7%	5%	6%	9%	7%
Bas.	0	0	0	0	0
Nucl. Red.	0	0	0	0	0
Retic. in % ....	.25%	1%	.25%	0	0
	Birth Wt. 1690				
Infants Weight	9240 grams	9415	10,250 Gms.	10,250	10,500 grms.
Gestation	33 wks. Premature				
Race	White				
Remarks	Marked Pallor	Liver & Iron	Marked improvement	Liver Extract & Iron	
	20 months of age	medication begun	infants color, etc.	in 1 dram (4 grams) contains	
				Liver Extract 3.75 grams Fer	
				rous Amm. Cit. 0.65 grams	
				(10 grains)	

TABLE 3. ANEMIA WITH SLOW RECOVERY
AFTER MASTOIDECTOMY AND JUGULAR
THROMBOSIS

Date	4-13-32	4-25-32	5-16-32	5-27-32	6-6-32	6-13-32	6-27-32
						Liver Extract 3.49 grams Ferric Amm. Cit. 0.51 grams (8 gr)	
Medication	Liver, Iron and Copper			1 dram (4 grams) contains Copper Sulphate 0.20 mgm.			
	Sahli	Sahli	Sahli				
Hemoglobin	53 Units	56 Units	52 Units	57 Newcomer	66 Newcomer	65 Newcomer	65 Newcomer
Erythrocytes	2,380,000	3,100,000	3,500,000	3,340,000	3,800,000	3,780,000	3,940,000
Leucocytes	6,100	12,100	12,000	9,000	9,500	6,200	6,800
% Neut. Poly.	66	68	66	53	60	52	57
% Eos. Poly.			3	2	2	7	4
% Basophiles						2	
% Lymphocytes	34	30	30	41	30	32	35
% Monocytes		2	1	4	8	7	4
% Reticulocytes				5	.25	.25	
Stippled Reds				1			
Remarks	Child had cold						

TABLE 4. VARIOUS FOODSTUFFS SHOWING
IRON CONTENT M G M % OF IRON

1. Milk, Human...0.020	Egg Yolk 4.5 to 8.0
2. Milk, Goats...0.016	Beef Liver (fresh).. 8.3
3. Milk, Cows ...0.014	Beef Liver (dry)...29.4
4. Spinach .....3.0 to 4.0	Hog Liver (fresh) .25.0
5. Lettuce .....0.66	Hog Liver (dry)...80.0
6. Peas .....1.49	Oysters (fresh)... 7.6
7. Carrots .....0.20	Oysters (dry) ....76.0
8. Almonds3.2	Strawberry 0.65
9. Rye Bread1.9	Orange Juice 0.02
10. Oatmeal3.8	Tomato 0.32

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INTRAVENOUS UROGRAPHY

In the diagnosis of tuberculosis of the kidney by intravenous urography, Pask carries out the injection as in any intravenous injection, using an ordinary 20 cc. syringe and injecting the contents slowly. It has been his practice to take a series of roentgenograms at intervals of five, ten, twenty and forty minutes after the injection, because in a single roentgenogram some part of the ureter or pelvis, or both, will be in systole, and that part will not contain any of the contrast substance. The only parts delineated in a given roentgenogram are those that are in diastole at the time of taking the urogram. The dynamics are constantly changing, owing to the peristalsis. By intravenous urography, visualization of both sides of the urinary tract and the relations between the various parts can be studied in a series of roentgenograms. It is thus possible to demonstrate the presence of both kidneys and to contrast their relative functional activity. It has been proved by animal experiment that neo-iopax (known abroad as uroselectan B) is excreted by the glomeruli of the kidneys and not by the tubules and that before it passes into the

renal pelvis, the general outline of the kidney is often well seen because the contrast substance is present in the glomeruli of the kidney. As the neo-iopax passes to the calices and pelvis and along the ureters, any abnormality can be noted. In cases of tuberculosis of the kidney, there is frequently seen irregularity of the outline of the pelvis and calices and dilatation of the ureter. If the kidney substance is completely destroyed on one side, no urogram will be obtained on that side. Neo-iopax, 5 per cent, in the urine, is said to be sufficient to give a roentgenogram. In normal kidneys a good roentgenogram is sometimes obtained as early as five minutes after injection, but in the tuberculous kidney the rate of excretion is retarded and occasionally six hours is necessary before a sufficiently dense pyelogram is obtained.

TREATMENT OF COLITIS

To establish sound treatment of ulcerative colitis, Smith emphasizes that the diagnosis should be based on a careful history and examination of the stools, a sigmoidoscopic examination performed without an anesthetic and with a minimum of inflation, and an ex-

amination of a swab taken directly from the ulcerated or inflamed surface of the colon. During the past three years the author has treated six cases of ulcerative colitis with Bergen's serum. The patients have all been women, and the disease had been present for periods varying from six months to three years. Two were treated by intramuscular injections and four by the intravenous route. The amount of serum used varied from 15 to 50 cc. in divided doses. In all six patients the loss of weight up to the commencement of treatment was 35 pounds (16 Kg.) or more, and all have regained their lost weight except one, who has regained 21 pounds (9.5 Kg.) and is still gaining. In the intravenous method of administration the anaphylactic shock is sometimes alarming. The intravenous injection of from 1 to 2 cc. of 1:1,000 solution of epinephrine immediately after the serum has been given is the best method of minimizing the shock. The shock is not very distressing until 15 cc. of serum is injected. When the reaction is severe, it takes about an hour before the patient feels comfortable. With the intramuscular route there is practically no reaction. After preliminary preparation of the patient, serum treatment is commenced with 1 cc. of Bergen's ulcerative colitis antistreptococcus serum. The dose is increased gradually every day or every second day until 5 cc. is reached. As improvement progresses, the time interval between the injections can be increased, although not more than three days should be allowed to elapse, as the shock is more profound after a longer interval. The shortest period of time required for clinical cure has been nine days, and the longest thirty-six days. This does not represent the length of time required to bring the patient to a state of physical fitness but only the length of time necessary to check the diarrhea. The author has seen these patients regularly over periods ranging from six months to three years, and so far no relapses have occurred.

CHRONIC SUPRARENAL INSUFFICIENCY

Packard and Wechsler report a case of malnutritional edema which exhibited an unusual clinical syndrome and a degenerative lesion of the suprarenals at necropsy. The puzzling feature of the case is the fact that, in spite of the continuation of his diet and for no reason that could be demonstrated by clinical and laboratory examinations, the patient, in the second half of chronic suprarenal insufficiency in animals progressively. The main features were the complete loss of body fat and an advanced degenerative lesion of both suprarenals with necrosis, regeneration, hemorrhages and capillary and venous thromboses. The author points out the similarity between the syndrome and the state of chronic suprarenal insufficiency in animals produced by bilateral suprarenalectomy. They review the literature describing the effect of total and partial in- and of the various vitamin deficiencies on the suprarenals in both animals and man and suggest that this clinical syndrome, heretofore undescribed, is one

of chronic suprarenal insufficiency due to the suprarenal degeneration occasioned by malnutrition.

WHATEVER ODDS THERE ARE

Give me but room to fight my way,
I ask no other gift from Fate;
Though it should crowd on me at bay,
Where only ghosts and shadows wait.

Shadows of old defeats blown by,
Ghosts of old dreams drawn from life's pit;
Yet all I ask is room to try
And prove Fate cannot make me quit.

No glint of glory from the height,
No flare of fame to call me far;
Merely the ground to make my fight
Against whatever odds there are.

—Grantland Rice.

Society Proceedings

COOK COUNTY

CHICAGO MEDICAL SOCIETY

Regular Meeting, November 8, 1933.

CANCER OF THE CERVIX OF THE UTERUS

Laboratory Data, R. H. Jaffé, Pathologist, Cook County Hospital.

Indications for Radiation Therapy, Henry Schmitz, Prof. Gynecology, Loyola University School of Medicine.

The Prevention and Early Diagnosis—Special Features in Treatment (lanternslide demonstration) Arthur H. Curtis.

Sponsored by Cancer Research Institute, Chicago Woman's Club.

Discussion opened by N. Sproat Heaney, Prof. Obstetrics and Gynecology, Rush Medical College.

Regular Meeting, November 15, 1933.

FEDERAL MEDICAL RELIEF FOR THE INDIGENT.

The Federal Emergency Relief Act, William Woodward, Director, Bureau of Legal Medicine and Legislation, American Medical Association.

Local Administration, Roscoe Leland, Director, Bureau of Medical Economics, American Medical Association.

General Discussion, Philip H. Kreuscher, Charles H. Phifer and John R. Neal.

Regular Meeting, November 22, 1933.

ENCEPHALITIS—ST. LOUIS EPIDEMIC.

General Survey, Surgeon Gen. Hugh Cummings, U. S. P. H. Service.

Clinical Data, T. C. Hempelmann, Assoc. Prof. Clin. Ped., Washington University Medical School.

Bacteriological Observations, N. Paul Hudson, Prof. Bacteriology, University of Chicago.

General Discussion opened by Peter Bassoe, Prof. of Neurology, Rush Medical College.

KANKAKEE COUNTY

A regular meeting of the Kankakee County Medical Society was held at Kankakee, Illinois, on November 22, 1933. The program was furnished by members of the State Department of Public Health conducted by the Director, Dr. Frank J. Jirka, who gave a very interesting talk on the following subjects, Epidemic Encephalitis, Tularemia and Amebic Dysentery.

Dr. R. H. Woodruff talked on "Mortality Trends and Vital Statistics."

Dr. H. J. Shaughnessy, "The Doctor and the Diagnostic Laboratory."

There was a large attendance present and the program was very well received; also a closer acquaintance was formed between the members of the State Department of Public Health and the members of the County Society. Dr. W. C. Van Wormer of the State Department was also present.

R. V. Thomas, M. D.,
Secretary.

OGLE COUNTY

Ogle County Medical Society held its Fall meeting at Rochelle, Illinois on Nov. 2, 1933. A fine dinner at Spring Lake was followed by a short business meeting with election of officers.

President, Dr. R. O. Brown, Mt. Morris; Vice-president, Dr. F. G. Andreen, Rochelle; Secretary, Dr. A. R. Bogue, Rochelle; Censor, Dr. G. S. Hendersen, Holcomb; Delegate for 2 Years, Dr. W. E. Kittler, Rochelle; Alternate Delegate, Dr. A. R. Bogue, Rochelle.

Dr. Charles D. Center, president-elect, Illinois State Medical Society, gave a splendid paper on "The Need of Cohesion."

The Disciples of Aesculapius and students of early medicine had a lofty ideal which is being slowly aspired from the new medical man. The younger men are more and more being workers for pharmaceutical houses and the suave salesman is doing the prescribing. Organization and cohesion are the safeguards to the Medical profession, and the young men should throw off some of their self-satisfaction and look out for the multitudinous encroachments.

Dr. T. B. Knox, Quincy, Councillor 6th District, after a friendly and personal eulogy of the preceding man and a few good stories gave a forceful treatise on cooperation and the effect of the cheap chiseler.

Thirty members and visitors attended and a lively discussion was enjoyed.

A. R. Bogue, Secretary.

Marriages

Robert H. Bell, Carlinville, Ill., to Miss Lydia Reichmann of St. Louis at Indianapolis, September 5.

Hyman J. Burstein, Decatur, Ill., to Miss Edythe Mae Cohen of Springfield, August 27.

Raymond E. Holben, Lincoln, Ill., to Miss Ella De Frates of Springfield, August 28.

Ray Woizeske King to Miss Mary Rose Sherburne, both of Peoria, Ill., August 24.

Robert Edward Lee Gunning, Galesburg, Ill., to Miss Jean Zearing of Princeton, October 7.

Robert Elmer Johnson, Danville, Ill., to Miss Virginia Blunk at Indianapolis, August 31.

Personals

Dr. Max Thorek addressed the McHenry County Medical Society, November 16, on "Non-surgical Treatment of Osteomyelitis."

Dr. Solomon Strouse, Chicago, discussed obesity before the Will-Grundy County Medical Society, November 8.

Dr. Elwood W. Mason has been named instructor in medicine in the division of biological sciences, University of Chicago.

Dr. William E. Buxton, West Salem, observed his seventy-fifth birthday, recently. Dr. Buxton has been practicing medicine for fifty years.

Dr. and Mrs. Charles D. Gardiner, Grand Tower, celebrated their golden wedding anniversary, October 11.

At a meeting of the McDonagh Society for Clinical Research, November 17, among others, Drs. Ernst Pribram and Stanley Fahlstrom spoke on "Studies in Arthritis and Arthrosis."

At a meeting of the Chicago Pathological Society, November 13, the speakers included Dr. Victor Levine on "Myocardial Changes in Essential Hypertension."

At a meeting of the Chicago Pediatric Society, Dr. Abraham B. Schwartz, Milwaukee, among others, discussed "Home Versus Hospital Care of Sick Children."

Speakers before the Chicago Surgical Society, November 3, included Dr. Fred W. Rankin, Lexington, Ky., on "Cancer of the Colon: Notes on Its Surgical Treatment."

The French Government has notified Disraeli Kobak that the Minister of Public Instruction and Fine Arts has signed a decree on October 2, 1933, conferring upon Dr. Kobak the University Palms, Grade Officier d'Academie, in recognition of his contributions to Physical Therapy.

At a meeting of the Bureau County Medical Society in Spring Valley, November 7, Dr. Charles Morgan McKenna, Chicago, spoke on

"Diagnosis and Treatment of Diseases of the Kidney."

Dr. Nathan S. Davis III, Chicago, discussed "Hypertension—Coronary Disease" before the Peoria City Medical Society, November 7.

Dr. Frank Garm Norbury, Jacksonville, discussed psychoneuroses not requiring institutional care before the Adams County Medical Society, November 13, in Quincy.

At a meeting of the Iowa and Illinois Central District Medical Association in Moline, October 26, Dr. Bert I. Beverly, Chicago, spoke on "Behavior Disturbances in Childhood."

Dr. John J. McShane, Springfield, spoke before the Christian County Medical Society in Taylorville, October 25, on epidemic encephalitis and other contagious diseases of the nervous system.

Dr. Ernst Kraas, University of Frankfurt, Germany, spoke before the Physiology Journal Club, Northwestern University Medical School, November 16, on "Choice of Operation in the Surgery of the Stomach and Gallbladder."

Dr. Arturo Castiglioni, professor of the history of medicine, University of Padua, lectured in the Italian Pavilion, Century of Progress, November 6; his subject was "The Renaissance of Medicine in Italy."

Dr. Benjamin Goldberg, associate professor in medicine, University of Illinois College of Medicine, was given an honorary professorship in the National University of Mexico, October 30, and gave a series of lectures on tuberculosis in Mexico City.

The Chicago Pediatric Society was addressed, November 21, by Drs. George Piness, Los Angeles, on "Food Factors in Allergy of Childhood," and Louis W. Sauer, "Whooping Cough Immunization."

The Chicago Council of Medical Women was addressed, November 3, by Drs. Minnie S. O. Perlstein and Esther T. Frankel on "Lymphogranuloma Inguinale" and "Use of Ultraviolet Light in Neuralgic Pain," respectively.

Dr. Isaac A. Abt will address the eighteenth annual meeting of the Institute of Medicine of Chicago, December 5, on "Treatment of Whooping Cough: A Study in the Evolution of Therapeutics."

The theme of the meeting of the Chicago Academy of Criminology, November 9, was clas-

sification of prisoners and individualization in management; the speakers were Dr. Paul L. Schroeder, Andrew Brown, Ph.D., and Mr. Donald Clemmer.

The Society of Medical History of Chicago was address, November 23, by Drs. James B. Herrick on "Allan Burns: Anatomist, Surgeon, Cardiologist, 1781-1813," and by Hugh T. Patrick on "Three Great Neurologists I Have Known."

Dr. William G. Rogers, among others, addressed the Chicago Gynecological Society, November 17, on "Rupture of the Fetal Liver," and Drs. Beatrice E. Tucker and Harry B. W. Benaron on "Parasacral Anesthesia in Obstetrics." Dr. Fred L. Adair was elected president.

Speakers before the Chicago Neurological Society, November 16, included Drs. Paul C. Bucy on "Ipsilateral Representation in the Motor and Premotor Cortex" and Mabel G. Masten, Madison, Wis., "Neurogenic Ulcers in Cerebral Lesions (Cushing's Syndrome)."

Speakers before the Ogle County Medical Society at Rochelle, October 26, included Drs. Charles D. Center, president-elect of the Illinois State Medical Society, and Thomas B. Knox, sixth district councilor, both of Quincy, on "The Need of Cohesion" and "Medical Care of the Unemployed," respectively.

Speakers before the Southern Illinois Medical Association, November 2-3, at Centralia, included Drs. Llewellyn Sale and Vilray P. Blair, St. Louis, on blood dyscrasias and correction of face injuries, respectively; Walter C. Alvarez, Rochester, Minn., common causes of nervous indigestion, and Harry S. Crossen, St. Louis, inflammatory conditions of the female pelvis.

Dr. William Snow Miller, emeritus professor of anatomy, University of Wisconsin School of Medicine, Madison, opened a series of lectures at the Veterans Hospital, Hines, October 30, with a talk on "The Air Spaces and Their Structure." Other subjects discussed on subsequent days were "The Vascular Supply of the Lung"; "The Lymphatics and Lymphoid Tissue," and "Some Applications of the Above Subjects to Disease."

News Notes

—The health division of the Council of Social Agencies was addressed at its annual meeting,

November 9, by Drs. Frank J. Jirka, state health officer; Frederick Tice of the Municipal Tuberculosis Sanitarium, and Frederick O. Tonney of the Chicago Board of Health.

—The National Research Council, Washington, D. C., has given \$21,000 to the University of Chicago for research in problems of sex. The amount will be divided into \$8,000 for the investigation of the biochemistry of sex hormones, under the direction of Fred C. Koch, Ph.D., and \$13,000 for investigations in the biology of sex under the direction of Dean Frank R. Lillie, Ph.D.

—Dr. Henry Close Hesseltine, instructor in obstetrics and gynecology, Division of Biological Sciences, University of Chicago, was awarded the annual prize of \$100 by the Central Association of Obstetricians and Gynecologists for the most meritorious work done by one of its members. This is the second time Dr. Hesseltine has won the prize, this year for his research on "Trichomonas Vaginalis Vaginitis," and last year for a paper on "Gynecologic Fungi Infections in Diabetic Patients."

—The tumor clinic of Michael Reese Hospital is conducting a clinical investigation on massive radium therapy of a special group of neoplasms and will accept free of charge a limited group of indigent patients suffering from these conditions. The tumors under investigation are cancer of the tonsil, pharynx, larynx and prostate, also benign prostatic hypertrophy occurring in patients in whom operation is contra-indicated. It is essential that these patients should not have received any previous radiation treatment. It is requested that the referring physician submit data concerning a case before sending the patient.

Deaths

SAMUEL ALPERT, Chicago; University of Toronto Faculty of Medicine, Toronto, Ont., Canada, 1933; aged 26; intern at St. Joseph's Hospital, where he died, November 2, of brain tumor.

JOSEPH C. BROOKHART, Oak Forest, Ill.; St. Louis College of Physicians and Surgeons, 1903; member of the Illinois State Medical Society; on the staff of the Cook County Tuberculosis Hospital; aged 53; died suddenly, October 17, of heart disease.

JOHN ROBINSON BUCHAN, Chicago; Long Island College Hospital, Brooklyn, 1872; Civil War veteran; aged

87; died, October 27, of toxemia and urinary retention due to carcinoma of the prostate and bladder, and hypostatic pneumonia.

THOMAS FAITH, Chicago; College of Physicians and Surgeons of Chicago, 1893; member of the Illinois State Medical Society and the American Academy of Ophthalmology and Oto-Laryngology; on the staff of the South Shore Hospital; aged 61; died, October 16, of arteriosclerosis and cerebral hemorrhage.

WILLIAM FULLER, Chicago; Rush Medical College, Chicago, 1887; member of the Illinois State Medical Association; formerly professor of operative surgery and associate professor of clinical surgery at the University of Illinois College of Medicine; Fellow of the American College of Surgeons; served during the World War; on the staffs of the Washington Park, Woodlawn and Englewood hospitals; aged 69; died, October 25, of uremia and carcinoma of the prostate.

SARAH LEE GOODWIN, Chicago; Hahnemann Medical College and Hospital, Chicago, 1893; aged 77; died, October 21, in the Ravenswood Hospital, of cardiac decomposition, following a fracture of the femur as the result of a fall.

OSCAR PORTER HARRIS, Mendota, Ill.; Rush Medical College, Chicago, 1902; a Fellow, A. M. A.; physician and owner of a hospital bearing his name; aged 62; died suddenly, October 29, of cerebral hemorrhage.

LYMAN G. HEMENWAY, Sycamore, Ill.; Bennett Medical College, Chicago, 1877; member of the Illinois State Medical Society; aged 80; died, October 5.

JOHN CUNNINGHAM MAXWELL, Sterling, Ill.; College of Physicians and Surgeons of Chicago, School of Medicine, of the University of Illinois, 1901; aged 67; died suddenly, October 14, in Houston, Texas, of cerebral hemorrhage.

JAMES EDWARD MCCARTHY, Hubbard Woods, Ill.; Rush Medical College, Chicago, 1927; formerly on the staffs of the Highland Park (Ill.) Hospital and St. Francis Hospital, Evanston; aged 34; died, October 26, of Hodgkin's disease.

JOHN PAGE McMAHAN, Peoria, Ill.; Rush Medical College, Chicago, 1883; member of the Illinois State Medical Society; on the staff of the Proctor Hospital; aged 75; died, October 5.

GEORGE HUTCHINS McNEMER, Cairo, Ill., University of Louisville (Ky.) School of Medicine, 1889; a Fellow, A. M. A.; past president of the Alexander County Medical Society; formerly on the staff of St. Mary's Hospital; aged 67; died suddenly, October 18.

WILLIAM K. POWIS, Chicago; Chicago Medical School, 1928; member of the Illinois State Medical Society; aged 42; on the staff of the Burnside Hospital, where he died, October 8, of acute intestinal obstruction.

JAMES WALTER RENDLEMAN, East St. Louis, Ill.; Jefferson Medical College of Philadelphia, 1894; a Fellow, A. M. A.; past president of St. Clair County Medical Society; on the staff of St. Mary's Hospital; aged 65; died, October 13, of heart disease.

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(Continued on page 28)

ILLINOIS PERIODIC PHYSICAL EXAMINATION RECORD*

Case No.....

Name Age..... Height Weight..... usual.....
 present.....
 normal.....

Temp. (3 min.)..... Pulse Rate { Seated (before exercise)
 { Standing (before exercise)
 { 60 sec. after exercise (sufficient to increase pulse to 110).....

Bl. Pres.: Sitting { Sys..... Lying { Sys.....
 { Dias..... { Dias.....

Hearing { R..... Vision { R.....
 { L..... { L.....

Urine: Color..... Reaction..... Sp. Gr. Alb..... Sugar.....
 Microscopic.....

1. (Standing)

- (1) Posture: erect.....stooped.....Lateral curvature
- (2) Superficial glandscervical.....axillaryinguinal..... epitrochlear.....
- (3) Abdomen: flatPendulus
- (4) Armsdefects
- (5) Legsbig veins..... scars.....
- (6) Feet: flatpainfuldeformed.....
- (7) SkinHands
- (8) NutritionHernial rings
- (9) Chest: expir.inspir.....Romberg

2. (Sitting)

- (1) ScalpPatellar reflexes
- (2) Eye reflexesto light to distance
- (3) Nose: conformation.....air passages freeobstructeddischarge.....
- (4) Teeth: caries.....devitalized.....crowned
- (5) Gums: healthy.....retracted.....inflamed
- (6) Tongue: clean..... coated..... moistdry
- (7) Pharynx: ulcers scarstonsils
- (8) Ears: conformationdischarge
- (9) Heart: locate apex (measure from mid-line—state interspaces).....character of sounds.....
- (10) Lungs: abnormal findings.....

3. (Lying)

- (1) Abdomen: palpationtender..... tumors
- (2) Liver: percussiontender..... palpable
- (3) Spleen: percussiontender..... palpable
- (4) Kidneys: palpabletender
- (5) Rectum: inspectiondigital findings
- (6) Male Genitalia
- (7) Female Genitalia and pelvis.....

4. Summary: defects of function and structure and errors of habit.....

5. Advice given to the patient.....

.....

.....

.....

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*Prepared by the Illinois State Medical Society.

Copies of this physical examination record may be secured from Doctor Harold M. Camp at Monmouth, Illinois, or the Educational Committee, Illinois State Medical Society, 185 North Wabash Avenue, Chicago.

HISTORY

(This side to be filled in by the person to be examined)

1. Name Country of birth.....Date of birth.....
2. AddressRace
3. Single, married, widowed, divorced.....
4. Occupation
5. How often have you changed your work?.....Why?
6. Is your work dangerous or unhealthy?.....
7. Is it indoors or out?.....
8. Is it light where you work?.....Dark?.....Dusty?Smelly?.....Noisy?.....Crowded?.....
9. At work are you usually seated, standing, or walking?
10. How many hours a day do you work?.....How many days a week?.....
11. Have you a room and bed to yourself?.....With window open?.....
12. What are your hours of sleep?.....Is your sleep restful?.....By what is it disturbed?
13. Where do you eat your meals?.....
14. How much time do you take for each meal?.....
15. Of what foods are you especially fond?.....
16. How much do you drink daily of:

Water	Tea	Soft drinks
Milk	Coffee.....	Alcoholic drinks
17. Do you eat candy?.....
18. Do you have a bowel movement daily without the use of drugs?.....What laxative do you use?.....How often?Do you have pain or bleeding with bowel movement?.....How often?
19. Have your menstrual periods been regular?.....
20. Have they interfered with your usual occupations?
21. Have pregnancies and confinements been free from accidents?
22. How often do you bathe?.....
23. What regular exercises do you take in addition to your work?.....
24. Do you share in church, social, political, club, or trade associations?.....
25. What are your pleasures or recreations?.....
26. Have you had any of the following diseases and at what ages?

Tuberculosis	Scarlet fever	Tonsilitis
Malaria	Diphtheria.....	Frequent colds.....
Rheumatism	Typhoid fever	Syphilis or gonorrhea.....
27. Do you have dyspepsia?.....
28. Do you have headaches?.....
29. Are you short of breath on going up stairs?.....
30. Do you catch cold easily and often?.....
31. Are you subject to sore throats?.....
32. Have you been vaccinated against small pox, typhoid fever, diphtheria?.....When?
33. Have you had any accidents, broken bones or surgical operations?
34. How often do you consult you dentist?.....
35. Are you as well at present as formerly?.....If not, why?.....
36. Do you remember any important diseases of your parents or family which may have affected your own health?

Remarks:

.....

.....

.....

.....



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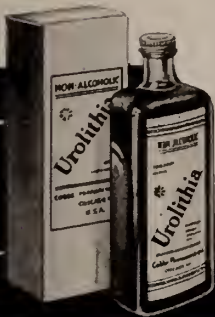
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According to the survey of Smith and his associates, paralysis of the recurrent laryngeal nerve occurs more frequently in men than in women, in the proportion of 2 to 1. Paralysis of the left recurrent laryngeal nerve is of much more frequent occurrence than paralysis of the right nerve. Goiter is the most frequent causal factor of the paralysis in women and implicates

the right nerve as often as the left. The commonest causes of the paralysis in men are aneurysm of the aorta and mediastinal tumor. In the majority of cases, paralysis of the recurrent laryngeal nerve should be regarded as a grave sign, especially in men. The majority of paralyzed vocal cords observed in this study occupied the cadaveric position. A paralyzed vocal cord, irrespective of its position, may completely recover function. This occurs mainly in those cases in which no cause for the paralysis can be discovered. The original aphonia resulting from a permanently paralyzed vocal cord will ultimately show considerable improvement, and complete recovery of the voice may occur within one year.

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L. M. B.

Turner observed that whole thyroid when administered simultaneously with cholesterol prevented the atheromatous changes produced by the latter in the aorta of rabbits in seventeen of nineteen animals. Thyroxine was less effective in this series, as atherosclerosis occurred in eight of eleven rabbits. Potassium iodide also exerted a strong protective action, as aortic lesions were present in only one of a series of twelve rabbits fed cholesterol and potassium iodide concurrently. The effectiveness of potassium iodide was not shared by potassium bromide or potassium chloride. A relationship was noted between the level of the cholesterol in the blood and the development of atherosclerosis. In general, the aortic lesions accompanied a hypercholesterolemia.

(Continued from page 24)

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